RA
421
R6
v.43
no. 4
cop. 2

Biological
& Medical
Serials

Royal society of health journa
m

Vol. XLIII.—No. 4. Issued January, 1923.

LIBRARY
MAR 15 1967
UNIVERSITY OF TORONTO

JOURNAL

OF

THE ROYAL SANITARY INSTITUTE

PUBLISHED IN ALTERNATE MONTHS.

LONDON:
OFFICES OF THE ROYAL SANITARY INSTITUTE,
90, BUCKINGHAM PALACE ROAD, S.W. 1, (TEL.: 3739 VICTORIA).
EDWARD STANFORD LTD., 12, 13, & 14, LONG ACRE, W.C. 2

PRICE TWO SHILLINGS NET.

HORLICK'S MALTED MILK

THE ORIGINAL

The Ideal All-Weather Food-Drink.

Made in England.

Horlick's Malted Milk is meat and drink in one, because it contains all necessary nutritive elements in the correct proportions demanded by Nature to support life and maintain health. Composed of the extracts of selected malted barley and wheat flour, combined with pure, Pasteurised cow's milk, it is perfectly digestible and rapidly assimilated, while Vitamines, those growth-promoting essentials, are supplied by both the milk and the grain.

Ready in a moment by stirring briskly in hot or cold water only.

To secure the original, always specify Horlick's when ordering.

In sterilised Glass Bottles of all Chemists and Stores, 2/-, 3/6, and 15/-.

HORLICK'S MALTED MILK CO., SLOUGH, BUCKS., ENGLAND.

IN THE INTERESTS OF HYGIENE

USE "SCOUT"

CLEANSES - DISINFECTS - AND PRESERVES THE HEALTH

SOAP

THE excellent quality and great purity of this Soap renders it highly suitable for all domestic purposes, as well as for the bath and toilet of the most fastidious.

PACKED IN CARTONS OF 3 TABLETS.

EDWARD COOK & CO., LTD.,

Soap Specialists —— BOW, E. 3.

VOL XLIII.—No. 4. Issued January, 1923.

JOURNAL OF THE ROYAL SANITARY INSTITUTE.

Telephone: VICTORIA 3739.

Telegraph: "SANITUTE, CHURTON, LONDON."

Contents.

Congress at Bournemouth—

SECTION C.—Maternity and Child Welfare, including School Hygiene.

"The Regulation and Distribution of Food at Maternity and Child Welfare Centres," by John Robertson, C.M.G., O.B.E., M.D., B.Sc. 157

"School Medical Services in certain Preventive and Curative Aspects," by David C. Kirkhope, M.D., Ch.M., D.P.H. 163

"The Effects of an Inefficient Midwifery Service on the Health of the Female Population," by Aleck W. Bourne, M.B., B.Ch., F.R.C.S. 165

"A Loophole in the Midwives Act," by R. J. Maule Horne, M.A., M.B., Ch.B., D.P.H. 168

SECTION D.—Personal and Domestic Hygiene.

Opening remarks by the Lady Mayoress of London 170

Address by Mrs. Muriel Lefroy 172

"Education in Hygiene," by Dr. Alexander Cawadias 177

"The Labour Saving House," by Mrs. C. S. Peel, O.B.E. 180

"The Elusive Ideal Home," by Arthur F. Wickenden, A.R.I.B.A., A.M.Inst.C.E., P.A.S.I. 186

SECTION E.—Industrial Hygiene.

"Constructive Welfare Work in Modern Industry," by Miss Constance Smith, O.B.E. 188

"Sickness in Industrial Communities," by E. A. Rusher, F.I.A., F.S.S. 195

"Tests of Aptness for Employment," by A. G. S. Mahomed, M.R.C.S. 201

BUILDING BYE-LAWS 205

CONDENSED MILK REGULATIONS 206

OBITUARY 208

Supplement—

Reviews of Books *57*

Meetings Held *67*

Dominion and Foreign Notes *72*

Forthcoming Meetings *72*

Calendar *75*

Elections *79*

Obituary *84*

LIST OF ADVERTISERS.

The numeral indicates the page on which the Advertisement appears; the dash (——) denotes that Advertisement is not in this issue.

Activated Sludge, Ltd. ... xviii
Balliere, Tindall & Cox ... —
Bayliss, Jones & Bayliss, Ltd. xvi
Berkefeld Filter Co. (British) vi
Bertramic Floorings Co. ... —
British Commercial Gas Assn. x
British Electrical Development Assn. —
Broad & Co., Ltd. xvi
Building Products Limited ... —
Burn Bros. vii
Cadbury Bros., Ltd. ... vi
Candy Filter Co., Ltd. ... —
Claughton Bros., Ltd. ... —
Cook, Edward, & Co., Ltd. ... i
Crapper, Thomas & Co., Ltd. —
Dominion Machinery Co., Ltd. vi
Doulton & Co., Ltd. ... v
Educational Supply Assn., Ltd. xix
Ferodo Ltd. ix
Flavel, Sidney, & Co., Ltd. ... xii
"Glaxo" iv
Harley, T. ix
Harpic Co. xv
Harrison, G. W. & Co. ... —
Heinemann, Wm. (Medical Books), Ltd. ... ... —
Holts Patents, Ltd. xvi
Horlick's Malted Milk ... i
Jennings, George, Ltd. ... vii
Kay Bros., Ltd. ix
Lewis, H. K., & Co., Ltd. ... xiv
Longmans, Green & Co. ... —
Macfarlane, Walter & Co. ... —
Manlove, Alliott & Co., Ltd. —
Meldrums Ltd. xi
Minimax Ltd. xi
Murray, John ... ... —
Newton, Chambers & Co., Ltd. xiii
O. Bruster & De Launoit ... iii
Pontifex, H. & Sons, Ltd. ... viii
"Ronuk," Ltd. iii
Round, James & Philip ... —
Royal Society for the Prevention of Cruelty to Animals ... xvii
Sankey, J. H., & Son, Ltd. ... xv
Septic Tank Co., Ltd. ... —
Silicate Paint Co. iv
Slack & Brownlow iv
Smethurst, Herbert & Sons, Ltd. xiii
Stewart, J. F., & Co., Ltd. ... —
Tintometer, Ltd. iii
United Alkali Co., Ltd. ... xiv

Particulars of the Arrangements for Advertising in the Journal can be obtained from the Offices of the Institute.

The Boiler that can be relied upon to do its work is The "GLOW-WORM."

The **ORIGINAL** Boiler of this Design and the **only one** with **really efficient** Hot Plate on which you can really boil and cook.

1. **Maximum Efficiency.**
2. **Minimum Consumption of Fuel.**
3. **Low Cost.**

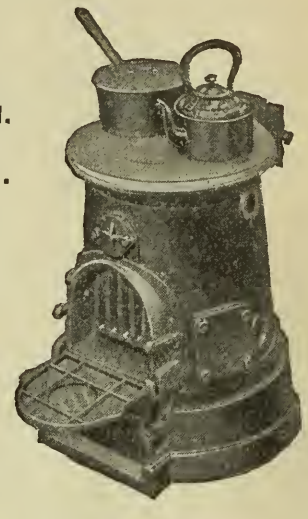
Size No. 1. Raising 42 gallons 100° per hour listed at **£12 10s. 0d.**

Size No. 2. Raising 56 gallons 100° per hour listed at **£14 10s. 0d.**

Made with **Shaking Bottom** for use with Coal, Coke or Anthracite, and **will consume Household Refuse.**

Size No. 1 provides for—

Abundant Hot Water Day and Night.
A Hot Bath every 15 Minutes.
A small Radiator System, Towel Rail, etc.
Warms the Kitchen.
Simple Cooking Operations.
A Fire always visible.
An open Fire for toasting and heating irons.



ALL AT A COST OF LESS THAN ½d. PER HOUR.

Can be connected to existing Hot Water Installation.

Sole Manufacturers (British make Registered Design)

O. BRUSTER & DE LAUNOIT, 4, LLOYD'S AVENUE, LONDON, E.C. 3.

MAKERS OF THE FAMOUS "BASECO" PATENT BOILER.

BY ROYAL WARRANT **TO H.M. THE KING.**

POLISHED FLOORS.

RONUK, Ltd.

are prepared to ESTIMATE for the Polishing and the Maintenance of all kinds of Floors in

HOSPITALS, INSTITUTIONS and PRIVATE HOUSES.

Write for Pamphlet.

Manufacturers of

'RONUK' SANITARY POLISH.

Awarded Gold Medal at XVIIth International Congress of Medicine, and Six Medals by the Royal Sanitary Institute, including the Highest and only Awards ever granted to a Polish.

Head Office and Factory:

'RONUK' LTD.,
Portslade, Brighton, Sussex.

Depots: LONDON, 16, South Molton Street, W.; MANCHESTER, 285, Deansgate.

The ORIGINAL COLOURMETER

(Lovibond's Tintometer),

Improved form of instrument, the two fields of view being adjacent.

(Patent No. 30473/22.)

Sole Makers:

The Tintometer, Ltd.,
SALISBURY.

For all those who need "building-up"

Glaxo

The Super-Milk

For Invalids and Convalescents

GLAXO (Medical Dept.)
56, OSNABURGH STREET,
LONDON N.W. 1.

GLAXO builds up wasted tissue, depleted energy, rapidly and effectively because it affords intense nourishment in a readily assimilable form. Even the most debilitated digestion will absorb Glaxo and recover its normal functioning upon a Glaxo diet.

A heaped tablespoonful of Glaxo (1 oz.) is equal in food value to 18 oysters; 24 oz. beef juice; 5 oz. lean roast beef; 4 oz. roast chicken breast; 7 oz. white fish; 7 oz. calves' foot jelly.

A DOCTOR SAYS: "My wife is now recovering from a severe attack of double pneumonia with pleurisy, and I found Glaxo the only food she could assimilate for some weeks. I have also had other cases recently of pneumonia after measles, and have ordered Glaxo with invariably good results."

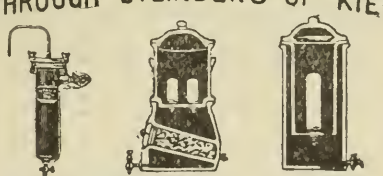
A Recipe book specially suitable for Invalids, entitled: "25 WAYS OF SERVING GLAXO," will be sent to medical men on request.

BRITISH-OWNED.

SLACK & BROWNLOW,
TOWN MILLS. TONBRIDGE.

"Brownlow" Filter

FILTRATION THROUGH CYLINDERS OF KIESELGUHR



CRYSTAL PURE WATER.
FREE FROM DISEASE GERMS.

CATALOGUE ON APPLICATION.

"DURESCO"

WASHABLE WATER PAINT.

Sole Manufacturers:

THE SILICATE PAINT Co., Ltd., Charlton, London, S.E.

BY·APPOINTMENT·TO·HIS·MAJESTY·THE·KING

Doulton

SANITARY EQUIPMENT

SPECIALISTS

in the Design and Manufacture of

MODERN SANITARY EQUIPMENT

Suitable for

Palaces, Mansions, Hotels, Hospitals, Public Buildings. Clubs, Cottages & Housing Schemes, etc.

Competitive Estimates and Designs for all Classes of Sanitary Appliances will be willingly forwarded on application.

SHOWROOMS AT
LONDON, MANCHESTER,
LIVERPOOL & GLASGOW.

By special appointment
DIEU ET MON DROIT
Doulton
Lambeth London

Telegrams:
DOULTON, LONDON.

Telephone:
VICTORIA 2260.

Volume XLIII. No. 4. **Issued January, 1923.**

JOURNAL

OF

THE ROYAL SANITARY INSTITUTE

CONGRESS AT BOURNEMOUTH.

SECTION C.—MATERNITY AND CHILD WELFARE, INCLUDING SCHOOL HYGIENE.

The Regulation and Distribution of Food at Maternity and Child Welfare Centres, by JOHN ROBERTSON, C.M.G., O.B.E., M.D., B.Sc., Medical Officer of Health, Birmingham. (FELLOW.)

THE scope of this discussion is more limited than at first suggested, but it is sufficiently wide to enable the very difficult problem of feeding mothers and children to be covered and some conclusions arrived at. Such a discussion is peculiarly opportune at the present time for most of us are reconsidering some of the conditions as a result of recent post-war experience.

In the first place, I suppose that all of us will be agreed that the giving of food, either free or subsidised, is at present an unfortunate necessity, and that the general principle of feeding some of the population at the expense of the others is thoroughly unsound. It indicates either that our economic system is out of gear, or that there are in the community individuals who are so thriftless or lazy or ignorant that they leave to the community as a whole the duty of providing sufficient food for expectant and nursing mothers, and for their helpless children, there is a post-war unemployment problem, which is exceptional and which has to be met by exceptional measures, which are alike unpleasant to the giver and the receiver, but our real problem is the one which is met with in normal times of underfed mothers and underfed children.

I am convinced that in every population there are always a small number of men who will take advantage of any means which may be available to enable them to get out of their obligation to support their families. One comes across a larger number of this group at present than ever before. I have had personal experience of men refusing work because they could get without working sufficient money for their purpose from the dole given them.

In normal times, I believe it is desirable before subsidising a family to ascertain in every case the reason why the subsidy is necessary. In every routine inquiry this should be carefully considered, and where it is ascertained that the fault lies with the parent or parents the case should in most cases be handed over to the Board of Guardians and not dealt with by the Public Health Authority. I am aware that it is a misfortune at the present time that both the Public Health Authority and the Board of Guardians should be called upon to deal with these cases of relief, but in view of the fact that the local authority have no power at present to deal with thriftless wastrels, we ought to invoke the aid of the Guardians and their powers in cases in which mothers and children are involved.

What then is the group which ought in my judgment to be dealt with by the Public Health Authority? In the community at large, there are always a considerable number of families brought to the verge of starvation by the illness of the breadwinner. There are also a certain number of families who are underfed by reason of the poor wages of the breadwinner. In the case of an even larger number of families, it is unreasonable to expect under present social conditions the expenditure of income to be so absolutely correct that the best results are obtained from the amount of money available. Theoretically, in these cases the income is sufficient and a professor of economics or a teacher of cookery could quite easily demonstrate how the income for any week could be expended to ensure at least that the food of the family would be adequate. But theory and practice in these matters do not always go hand in hand even in the case of careful people. The consequence is that the family is more or less underfed.

I have not mentioned in these groups of desirable people the careful and thrifty wife of the drunkard or the wife of the man who is in gaol. There are a good many such cases in which some means are available, which require to be supplemented in order to keep the wife efficiently nourished and the family out of the Workhouse. Where it is found that the whole upkeep of the family has to be provided by society then obviously one authority rather than two ought to look after the feeding of the family, and in this case the Board of Guardians is probably the right authority.

I have had personal experience now of feeding expectant and nursing mothers during a period of 15 years. The feeding in our case has been done by providing these women with a good cooked dinner at mid-day. At one time we used to weigh the mothers before the commencement of the feeding and at intervals during the course of feeding, and there was, as one would expect, an increase in weight and a general improvement in health. But the most obvious improvement took place in the general condition of the infant. A peevish, fretful child was almost uniformly transformed into

a healthy contented child after the half-starved mother had been properly fed, and when one realises the comfort that a contented child is to a working woman, one can easily appreciate how the rest and extra food benefit her.

In Birmingham we have found it extremely difficult to persuade the mothers to accept these meals. From personal observation, I can state without fear of contradiction, that they are extraordinarily unselfish, and that when the food of the family is limited, the last person to get sufficient is the mother whether she is an expectant or nursing mother. She even does not like the idea of accepting something for herself which does not go to be shared with the others in the family, and in our experience it is perfectly useless to send food home for the mother to consume there. We have, therefore, for many years always insisted on the mothers in these cases coming up for their dinner.

There are a great many objections to this, but from my own experience, I know of no method of getting the mother to have the food other than seeing that she eats it at one of the dinner centres.

We have always charged for these dinners, and it has been exceedingly seldom that we have not been paid. The small sums charged, if not paid at the time, have been paid in nearly every case as soon as the husband has got to work again. We have been thanked for the help when the mother has ceased attending. Once the mother has been persuaded to attend at the dinner centre, this has been the easiest and most pleasant of all our forms of relief, and I believe it is one which has been of immense value. The experience elsewhere may be different to ours, but my experience is that these expectant and nursing mothers do not like receiving this relief, and it is only by tact and good management that they can be induced to attend.

In addition to the food value received, the work has been of great assistance to the Child Welfare centre in impressing on the mothers the necessity of bringing their children to the Centres and in getting to know many of their difficulties, because once they realise that the work is being done in the interests of infant life they come readily, and appear to enjoy and appreciate what they are told. No set lecture or scheme for lecturing is arranged for at these dinners, but it is very important that the dinners should be under the supervision of someone who is capable of adapting herself to the occasion and of introducing on the spur of the moment a subject which will interest them. This is much more effective than any set course of lectures, which undoubtedly tend to become wearisome in course of time. The essence of success in this respect lies with a competent supervisor.

All the mothers are selected by the doctors at the Centres as being insufficiently nourished. In the first instance these mothers are mostly

recommended to the Centre by the Visitors, with a statement of the special reasons why the income or the feeding is insufficient.

The question of supplying milk to hand-fed babies and to children up to school age presents much more difficulty, because in every case it is probable that the child for whom the milk is intended does not get the whole of it. Our experience is that the necessity for giving hand-fed babies milk at a reduced cost is not perhaps as great as that of giving it to the children at three years of age and upwards, because most mothers in one way or another are able to secure sufficient for the younger child. In my opinion the evidence of underfeeding amongst hand-fed babies is not nearly as great as the evidence which exists of bad feeding. Most of the poverty-stricken people are humane enough to get sufficient milk for their youngest children by one means or another. Disease and death lie more with the bad handling of the milk than with its absence. It is, therefore, very much more important to concentrate on instruction in the home as to how to deal with the available milk than to give milk for hand-fed babies.

As soon as the child begins to get on to the food of the family insufficiency will make itself evident in prejudicially affecting the growth of the child and its general appearance. Here, again, instruction in the buying and method of preparing the food for children is more important than the actual giving of milk.

In giving milk to these mothers we have always made use of an inquiry form, which takes into account the income, the number in the family, and the nett amount of money available for food, and we have given the orders for the milk on the usual milkman of the family. These forms, which are not quite in compliance with the most recent regulation of the Ministry of Health, have been in our opinion adequate.

For children of school age I was very impressed with the method adopted in America of giving milk at school instead of school meals. The method adopted was exceedingly simple. Children were weighed by teachers, and the weight was compared with a standard scale. Those who were found to be under weight were referred to the school doctor, who decided as to what was the reason for the underweight. If, in his opinion, the underweight was due to under-nourishment, the child was given at school half-a-pint of milk either once or twice a day, mainly at the expense of the parents. The milk was supplied to the school in half-pint bottles, with a pasteboard stopper in which there was a tongue cut. This tongue was opened in the school and a straw put through, which enabled the scholar to suck up the milk. The child was also given a biscuit, which he ate with the milk.

The method was clean, and did not entail much trouble on the school authorities. It enabled the child to get good nutrient material, it sup-

plemented the child's ordinary food by a really valuable substance, and the results were extremely good in the direction of bringing up the under-nourished children to their proper weight. The scheme is largely carried out in all the big cities in the States, and the results appeared to me to be equally good everywhere ; indeed, I should say that from the child's point of view the results were better than those obtained in many towns where the cooked meal is given at mid-day.

In connection with this supplementary milk ration there is a great organisation in the States, partly developed from the Public Health authority and partly from the dairymen and farmers, for educating parents and children in the necessity of drinking more milk. A large number of cinema films are shown to the children and their parents, and a good many little plays have been organised for the children on the subject of the production of milk and the value of milk as a food. The farmers and dairymen have subscribed among them a considerable amount of money for this work, mainly from a commercial motive, but also from the point of view that it is a valuable national duty. In my opinion, therefore, the feeding of school children ought to be mainly limited to supplying this extra milk ration. When a child is found in the States to be under-nourished and under weight, and when it is intended that milk is to be given to the child, a letter is sent to his or her parents stating this fact and informing them that the milk will be given at the cost of the parents. If this is put properly, very little difficulty arises in getting the money refunded by the parents. Of course, there are a certain number of cases in which the money is not forthcoming, and therefore the milk is given free, but the children affected are not distinguished in the school in any way.

It would be difficult in England to get a supply of milk which was quite safe for distribution under the conditions I have mentioned above, because all American milk is pasteurised, and the question will arise as to whether the distribution of pasteurised milk among infants and older children is a legitimate one for a Public Health authority to undertake.

I have looked into these questions as carefully as I can, and I think there is no doubt that pasteurisation or the drying of milk does damage the anti-scorbutic vitamine. It does not damage the growth vitamine, but all heating of milk for young infants damages the anti-scorbutic vitamine, and, therefore, all hand-fed babies ought to have their milk practically from any source whatever supplemented by some fruit juice, so that there seems to me to be every reason to advocate the giving of pasteurised milk by a local authority. It is an additional advantage that the ordinary infections carried by milk: scarlet fever, typhoid fever, diphtheria, tuberculosis, etc., are killed by the proper pasteurisation of milk. The

finest supplies of milk on our markets have given rise to outbreaks of certain infectious diseases occasionally, and this could easily be prevented by the use of pasteurised milk.

Dried milk has great value for infant feeding, but it is obviously not so suitable for the feeding of older children even if reconstituted on the best modern lines.

Another method which has been recently introduced in the States, is the inauguration of Nutrition Clinics. They have found that in the majority of under nourished children, the fault is not due to lack of sufficient means spent on food, but to other hygienic defects. They have been extraordinarily successful in dealing with these cases without giving. They first put the child's physical defects right, *e.g.*, adenoids, tonsils, etc. Then they deal with the child's home habits, sleep, rest, refusing of meals, bowels, prevention of fatigue, fresh air day and night. It will be obvious to all that you get this type of mal-nutrition in all classes. I am sure that these clinics are destined to play an important part in the future.

In my opinion there has been a tendency in recent years to the giving of food too freely on a purely wage basis. I am aware, of course, that these years have been exceptional, but I believe that more value is to be attached to educational means than to the food itself.

The following took part in the discussion on this paper :—Dr. Reginald C. Jewsbury, London ; Dr. Mabel G. Brodie, Durham C.C. ; Dr. J. J. Buchan, Bradford ; Dr. H. Scurfield, Folkestone ; Bailie John Wheatley, Glasgow ; Councillor Mrs. E. Palmer, Southampton ; Dr. Joseph Cates, Surrey C.C. ; Dr. E. H. T. Nash, Heston and Isleworth.

The School Medical Services in certain Preventive and Curative Aspects, by David C. Kirkhope, M.D., Ch.M., D.P.H., Barrister-at-Law, Medical Officer of Health, Tottenham.

(Abstract.)

THE term "The Public Health Services" has a new meaning since the introduction of School Medical Inspection in 1907. Environment has been given a secondary place, and the health of the individual has been emphasised.

Provision is now made by the State, with but few gaps in the chain, for caring for the health of every unit of the community from his conception to his demise.

Curative medicine still bulks largely, however; preventive medicine has not yet come into its own.

For children suffering from the effects of mal-nutrition and poor environment, treatment such as is provided at convalescent homes on the coast or in the country is most appropriate.

Such treatment may be provided by the Local Authority direct, or through the agency of a voluntary institution. In the latter event the Ministry of Education allows contributions to rank for grant. The same arrangements are applicable in relation to crippled children for whom surgical appliances are necessary to enable then to attend school.

For minor deformities remedial exercises, given under the supervision of an expert, are proving effective.

The work of school-dentists is now showing good results and is bringing into prominence the necessity for treatment and advice at an earlier period than school-age. Health-visitors should be required to note and report the earliest manifestations of dental destruction or deformity, in order that the appropriate treatment may be afforded in time.

The complicating conditions that call for operation for enlarged tonsils and adenoids are generally recognised. In the absence of these is operation justifiable? Where the tissues are greatly hypertrophied their removal is frequently followed by rapid developmental changes.

Should operations for tonsils and adenoids precede admission to school?

Parasitic Diseases.—X-rays for ringworm of the scalp is the only reliable treatment.

Verminous conditions of the hair are speedily remedied by 10% Liq. Potassæ and the "Hygienic Comb."

For scabies—the spray-bath and inunction for the whole family.

Infectious Diseases.—Exclusion from school: how far is it justified?

Scarlet Fever.—The domiciliary treatment is likely to prove as efficacious as hospital-isolation. Exclusion of contacts is unnecessary.

Diphtheria.—The Schick test is on its trial. Tentatively it may be made adjunctive to passive immunity.

Is it feasible to hope to immunise effectively a large congested community?

Measles, Whooping Cough, Mumps and Chicken-pox.—Are any commensurate advantages gained by excluding contacts?

Heart Lesions—The practice of prohibiting children with impure heart-sounds from engaging in physical exercises is overdone.

Every heart-case should be allowed exercise that falls short of producing fatigue, unless there are ample reasons to the contrary. A heart-murmur is not a sufficient reason.

Licensing Children for Theatrical Performances.—The burden upon school medical officers in relation to the granting of these licences is a heavy one. It is doubtful whether official sanction should be given to parents to subject their children of school-age to a theatrical life while their educational curriculum is in progress.

A plea is made for the unification of all health-functions in one central authority and one local authority.

The following took part in the discussion on this paper:—Dr. A. T. Nankivell, Hornsey; Dr. Ada Paterson, New Zealand; Dr. W. A. Daley, Blackburn; Dr. E. H. T. Nash, Heston and Isleworth.

The Effects of an Inefficient Midwifery Service on the Health of the Female Population, by ALECK W. BOURNE, M.B., B.CH., F.R.C.S.

(ABSTRACT).

1. It is well known that pelvic disease in women forms a large proportion of all disease from which they are likely to suffer, and of pelvic disorders it is common knowledge that the events of childbirth are amongst the chief causal factors.

How great a part pregnancy and parturition play is, however, scarcely realized until an analysis of a large number of hospital out-patients is made.

2. An analysis of my out-patients at the Samaritan Hospital for Women over a period of four years yields the following figures :—

Total number of new patients seen	2,096
Number applying for diagnosis of pregnancy	250
Number suffering from venereal disease	106
Number of non-gynæcological patients	666
Total number of true gynæcological patients	1,074
Number of patients whose disease originates from parturition...	333

Therefore 31 per cent. of true gynæcological patients at a typical out-patient clinic are suffering from effects of child-bearing.

3. The chief varieties of disorder are as follows :—

Prolapse of vagina and uterus	16% of all cases (1,074)
Laceration of cervix and uterine infection	11% ,, ,,
Sub-involution	3% ,, ,,
Vesico-vaginal fistula, 1 patient.	

All these conditions are productive of much incapacity and semi-invalidism. That arising from prolapse causes constant pain and inability for sustained effort, and required either an operation for its cure, or the wearing of a pessary for many years.

Uterine infection and cervical lacerations are prolific causes of ill-health, discomfort, and, later, neurasthenic symptoms arising from the constant presence of excessive menstrual loss, persistent purulent discharge and chronic backache.

All these lesions greatly reduce a woman's health, happiness, and usefulness.

In addition to the above, there are numbers of patients suffering from post-partum debility and lax abdominal wall with visceroptosis, dating their onset from a confinement. These are not included in the above figures because they are not easily preventable, and depend rather on the patient's

environment than on the manner in which her confinement has been attended.

4. The *remedies* are prophylactic and range themselves under :—

(*a*) *Ante-natal Care.*—Careful supervision and examination of the mother during the last six weeks of pregnancy are of immense value, not only in preventing the rarer and greater catastrophies such as eclampsia and obstructed labour, but also in affording a warning of merely difficult labours requiring the use of hard traction on forceps, the common cause of bruising, lacerations and infection.

Timely induction of labour in those cases where the head cannot be pressed into the brim four weeks before full term would save lacerations, infections and loss of the child.

(*b*) *Management of Labour*, with especial reference to :—

(i.) prevention of infection,

(ii.) avoidance of laceration of cervix,

(iii.) efficient suturing of perinæal tears.

(i.) *Prevention of Infection.*—A certain amount of post-partum infection is produced by organisms already present in the birth-canal before labour, but normally this canal is free from pyogenic microbes, and in the majority of cases of pyrexia after labour infection has been introduced from without.

I emphasize the importance of minor degrees of infection which, not sharp enough to produce serious puerperal fever, are sufficient to lay the foundation of chronic endometritis and cervicitis with menorrhagia and leukorrhœa.

We often see it boasted by a writer in a medical correspondence that he has never had a case of septicæmia in a thousand or more confinements. That may be easily true, but he is unable to state that many of his patients have not contracted a sub-acute minor infection with its resulting sequelæ.

Infection can only be prevented by wearing boiled rubber gloves, the minimum of vaginal examinations, careful swabbing of the external parts before examining, proper management of the third stage of labour, and the prevention of difficult manipulative labours by a timely induction.

(ii.) *Avoidance of Laceration of the Cervix.*—Deep tears of the cervix and vaginal vault may cause chronic cervicitis, leukorrhœa and a contracting scar in the vault of the vagina which is usually a source of chronic pelvic pain.

Serious cervical tears can be almost entirely prevented by refraining from the use of forceps before the major diameter of the head has passed through the os, and by avoiding the use of pituitary extract until the head has completely passed through the os. Lacerations from any other cause are relatively infrequent.

(iii.) A tear of the perinæum is often unavoidable, and, if properly sutured at the time is of comparatively small importance. The repair should be done at once, and by wide and deep stitches in order to secure the all-important levator ani muscles.

5. A better midwifery service can only be secured by an improved teaching of the medical student and midwife, who, in their turn, must teach the public. The medical student is still only required to spend a minimum of one month in practical midwifery, and a total of three terms on the whole subject of obstetrics and diseases of women out of a period of three years (nine terms) of hospital-practice. It is only recently that many teaching hospitals have established any in-patient maternity-facilities and even now they may have less than ten beds. It is only during the last few years that many students have had any training in an ante-natal clinic.

In the case of the midwife we are trying to give a highly specialized scientific instruction, involving strange technical terms, to a woman, frequently illiterate, who has had no previous education in the scientific method, in six months. In this brief time a woman with a short and incomplete general education, who has never developed the habit of learning, is expected to learn anatomy, physiology, the mechanics and clinical aspects of pregnancy and labour and the treatment of abnormalities. The result is that she gains no understanding but a superficial and unreasoning knowledge.

The remedy is to insist on a far better type of woman, a much higher standard of general education, and a higher intelligence than the low level attained by many who now aspire to be midwives.

The teaching of the London schools for midwives is good, but some of the less known, smaller provincial schools must be sadly deficient, judging from the standard reached at the examinations of the C.M.B.

A discussion on "The Need for Extension of Maternity and Child Welfare Work" was opened by R. Veitch Clark, M.A., M.D., B.Sc., D.P.H., Medical Officer of Health, Croydon (Fellow), in which the following took part:—Dr. R. Woolsey Stocks, West Bromwich; Dr. J. J. Buchan, Bradford; Councillor Nurse Cole; Dr. A. G. Wilkins, Stafford; Dr. Mabel G. Brodie, Durham County.

A Loophole in the Midwives Act, by R. J. Maule Horne, M.A., M.B., Ch.B., B.Sc., D.P.H., Medical Officer of Health, Poole (member).

In the course of routine-work connected with Maternity and Child Welfare in my borough I was struck by the number of cases which came to my notice, without any special enquiries, where mothers had been attended at the birth of a child, by an uncertified and unqualified " Maternity Nurse " only, no doctor being *present at the actual birth of the child.*

These cases have occurred in connection with the every-day work of the Public Health Department, and no special search has been made for others. It would therefore seem highly improbable that all the existing cases have come to my notice.

The cases in my file are :—Mrs. A, 3 ; Mrs. B, 2 ; Mrs. C, 2 ; Mrs. D, 3 ; Mrs. E, 2.

Mrs. A. was also associated with a case in March, 1920, which resulted in the mother's death from a complication of pregnancy (Pelvic Peritonitis).

Of the above quoted instances,

In Mrs. A's practice, one mother developed *Puerperal Fever ;* an avoidable and very serious illness.

In Mrs. B's practice, one mother developed *Puerperal Fever* and died.

In Mrs. C's practice, one infant developed Ophthalmia Neonatorum.

It is assumed that the other cases progressed normally.

A third case of *Puerperal Fever* (fatal) has lately occurred where the Maternity Nurse Mrs. B. was working in conjunction with a Doctor. This case is still *sub judice,* and the Supervising Authority has cognisance of the particulars.

The outstanding fact is that of fourteen cases of childbirth with which the Maternity Nurses have been associated (in two of which a Doctor was also in attendance), there occurred :—

Three cases of Puerperal Fever, with two deaths ;

One case of Pelvic Peritonitis, with one death ; and

One ascertained case of Ophthalmia Neonatorum.

This is an intolerable situation from the point of view of Public Health : that three out of fourteen women of child-bearing age should lose their lives, while on behalf of one of these, and of the Puerperal Fever case which survived, and the Ophthalmia Neonatorum case, the Borough has incurred considerable expense on account of hospital-treatment.

Questions which arise in this connection are :—

What constitutes (under Sec. 1 (2) Midwives Act, 1902), the expression " under the direction of a qualified Medical Practitioner " ?

If a Doctor accept attendance on a case of Labour in conjunction with an uncertified Maternity Nurse, where no Midwife is engaged, and knowing this, is he to be expected to make a special point of being present *at the time of birth ?*

If he is not, then he would appear to be treating the Maternity Nurse as a Midwife, as any action of a Midwife taken by the Nurse could not be construed to be taken in " emergency " (Sec. 1 (2)).

It would appear to be more than mere coincidence that, of the cases which have casually come to the Department's notice within the last eight months, the Medical Practitioner should miss being present *at the birth* on 12 occasions (affecting 3 Doctors).

In a case of Puerperal Fever or any other condition supposed to be infectious, a *Midwife* is under an obligation (C.M.B. Rules E. 6 and E. 23) which prevent her going to another engagement until sanctioned by the Local Supervising Authority.

In a similar case where an unqualified woman is in attendance, this woman is in a position to spread such an infection unwittingly (except that the Local Sanitary Authority can, if the facts happen to come before them, disinfect her clothes and her rooms). The Governing Rules do not safeguard the public in this respect.

It was hoped that in course of time the *bona fide* Midwife would cease to be, and the certified Midwife would have a fair field for her energies, but it would appear that there is a danger of the Maternity Nurse taking the place of the *bona fide* Midwife.

There is no advantage to be gained by shutting our eyes to facts. If the Maternity Nurse is not better controlled, if the interpretation of the term " under the direction of a qualified Medical Practitioner " is not made so clear that there can be no room for equivocation on the part either of the Medical Practitioner or of the Maternity Nurse, there is a possibility of the main purpose of the Act being stultified, as the uncertified woman may have the opportunity of carrying on a practice without the use of the term Midwife.

The following took part in the discussion on the papers by Dr. Aleck W. Bourne and Dr. R. J. Maule Horne (see pages 165 and 168) :—Dr. E. Colston Williams, Glamorgan ; Dr. R. J. Ewart, Barking ; Miss E. M. Wyatt, Lewes ; Dr. G. Clark Trotter, Islington ; Dr. A. G. Wilkins, Stafford ; Mr. H. T. Pullan, Bradford ; Miss Dodd.

SECTION D.—PERSONAL AND DOMESTIC HYGIENE.

Opening Remarks by the LADY MAYORESS of London.

I SHOULD like to take this opportunity of expressing the pleasure which it gives to the Lord Mayor and myself to be present at this Conference in Bournemouth, and particularly pleased am I to be intimately associated with the Section which deals with personal and domestic hygiene.

We all understand what is meant by the term "hygiene," but very few of us could express, in brief terms, the limitations of the application of this science. This difficulty would be more especially experienced in defining the various matters which might come within the scope of the deliberations of this Section.

In the early days of sanitary progress we welcomed the introduction of those beneficent measures which the awakening of a sanitary conscience in the minds of our legislators gave rise to. We were brought to recognise, by the efforts of those early workers, Lord Shaftesbury for example, and one of the early stalwarts of the Sanitary Institute, Dr. Richardson, that every living person, no matter how low in the social scale his place might be, had certain fundamental rights. These were clearly set out as a right to a supply of pure water to assuage his thirst, the right to a certain amount of sunshine, and the right to adequate shelter from the elements. These rights were often denied them. Even to-day they are not so freely available as they ought to be. People came to see that they were common rights accruing to the community and that it was the duty of the Local Authority to ensure that the benefits were available. Parliament in its wisdom passed laws which made it possible for Local Authorities to act. In some instances reluctance was evident, but in the majority commendable zeal was the feature. Time, energy and money, have been expended in these last few decades and, as a consequence, the health of the people has improved.

To-day every child born has a reasonable expectation of living longer than a child born in a similar station had 50 years ago, but prolongation of life as a fact is associated with other advantages. Obviously there must be less illness for, as a rule, every person passes through a number of minor illnesses before the fatal illness arrives. A reduction of these minor illnesses means a greater amount of domestic happiness since there is less expenditure in the household and greater working capacity of each individual member.

This represents the credit side of an account, but, unfortunately, it is

generally only appraised at a hypothetical value. The debit side, on the contrary, shows hard material facts in the way of pounds, shillings and pence, actually expended. The delay in producing good results and the gradual dimming of the comparative position between to-day and yesterday causes value received to be somewhat ignored, but that a value and an adequate value has been received for all this money expended is certain.

The energies of Local Authorities in the past have brought about a state of affairs in which openings for the display of new municipal energies which will improve the community as a whole are not so numerous to-day as they were, but yet, notwithstanding this fact, the work which may be undertaken with advantage is increasing. Why? For the simple reason that progress has shewn that if communal effort is to furnish the greatest return individual effort must supplement it.

It is this individual effort which is the strongest feature of the hygiene of to-day. The duties of the community to the individual have been emphasised, and the new programme sets out the duty of the individual towards all others and particularly towards himself or herself.

If a person acts rightly towards himself, avoids excesses, cultivates health both in mind and body, and helps others by the means of the knowledge he has acquired, such an individual becomes a real factor in State progress and development.

It takes five years to make a plumber or a painter, but in the present state of society no training appears necessary to make a woman fit to assume the responsible position of wife. Which is the more important occupation? It is in this simple fact that we have the underlying urgency for the widest dissemination of knowledge in personal and domestic hygiene.

How are we to bring about the change and improvement? I take it that is one of the main objects of this Section and I wish you success in your efforts.

SECTION D.—PERSONAL AND DOMESTIC HYGIENE.

Presidential Address by Mrs. Muriel Lefroy (formerly Scholar of Newnham College).

WHEN some of the officers of this Institute came to Bournemouth early in the year for a preliminary discussion as to preparations necessary for this Congress, I was much interested to learn that this section (Personal and Domestic Hygiene) was a comparatively late development in the proceedings of the Congress, and that from a small beginning its importance has rapidly increased.

When you look at the list of Conferences which are being held this week, you will find that they deal with all the official people concerned in the public provision of things desirable for the health of the citizens; and it is to promote the efficiency of this public provision of hygienic benefits that the Sanitary Institute exists. But there is an adage about taking horses to water and the difficulty of making them drink, and I imagine that the genesis of the section over which I have the honour of presiding is to be found in a desire to lead the individual citizen to avail himself intelligently of the sanitary benefits provided for him.

Let us hope that the rapid development of this section indicates equally rapid increase in the interest taken by the general public in questions of health, and in the realisation that these matters cannot be effectively dealt with except by co-operative effort on the part of local authorities and the individual citizen.

The value of such co-operative effort can hardly be over-estimated. Imagine the position of a local authority well supplied with skilled and enthusiastic officials who desire to see their district clean and healthy, knowing that wise expenditure to such ends is real economy not only in regard to health and morals, but, in the long run, financially as well. If the general public are not alive to the value of such work the authorities will be thwarted at every turn; and not only will they be harried as to the Sanitary rate but many of their regulations will be made in vain, for example, if provision for baths were made compulsory in all new houses they might be put to other purposes, rabbit-hutches, coal-cellars or even gardens, to the great detriment of the drains.

And on the other hand, how can we expect the most enlightened of corporations to empty dustbins more than once a week unless the popular demand is such as to justify the resulting rise in the rates.

Some of the difficulties in this matter of co-operation between the authorities and the individual lie in the extreme complexity of the modern municipal organization and the rapid growth of legislation as the State undertakes more and more social service.

To meet these difficulties voluntary social service Councils have been established in many places, linking up the individual with the public social services, which in the broad sense of the term are very largely sanitary, and co-ordinating them, so that the fullest benefits may be rendered easily available.

The difficulties pressing down fellow citizens can often be alleviated by the sympathy and advice of those who know the facilities offered by the various public services through their training and experience in voluntary social work through these Councils.

The more these public services increase the more will the individual citizen be needed to interpret to the person of limited culture the possibilities offered them by the Authorities. Here is scope for the philanthropist !

Since this section has been provided with a president and an honorary president, both of whom are women, it would seem to be agreed that personal and domestic hygiene is pre-eminently a woman's affair.

This is only reasonable, for it is the women after all, who, for the most part, look after homes, supply the men's needs in the matter of food and warmth and look after their clothes as well as their own, and it is the women who have to nurse them back to health if they get ill.

Indeed, my personal experience with women who are keenly interested in their civic responsibilities, leads me hopefully to expect that one of the results of granting the Parliamentary and Local Government votes to women will be the more rapid development of local and national sanitary services, using the term in its most extended significance, for no other call on the rates and taxes will be more willingly met by them owing to their appreciation of the benefits derived by themselves and the next generation, and of the real economy of such expenditure ; and humanitarian and hygienic motives will make them press for the compulsory use of the humane killer and the increase in the number of public slaughter-houses.

But with all these good dispositions there is much room for education even for the most enlightened of us ordinary citizens, and with this Congress to help and inspire us, Bournemouth members must go out as health-missionaries so as to make the autumn health-week in this Borough a step forward in all questions of hygiene and the intelligent use of the health-services.

Perhaps I have unduly stretched Personal and Domestic Hygiene in making it cover all the interests of this great Institute in which every in-

dividual is personally concerned as an ordinary human being on non-professional grounds and as a member of a household ; as in this way it would seem that this section might include all the subjects treated of by this Congress, but at any rate, Electricity in the Home, Domestic Heating and Ventilation, and the Elusive Ideal House, may well be of much interest to the members of this section.

I have suggested co-operation as the guiding star in the relations between the individual and the Public Sanitary Authorities and now, turning to the problem of the home-ruler, the conditions of modern life make it increasingly desirable that efficiency should be our motto in the household.

The Problem of Domestic Service is still on us in an acute form in spite of unemployment.

The growing realisation of the claims of every individual to as full and complete a life as possible, drives us in the same way and is reinforced by a fuller appreciation of the duty of the individual to society at large.

Thus we see the modern housewife endeavouring to cope with her home-duties and also with what I will call her civic and national duties as the more accurate term social duties, is liable to misinterpretation. These extramural duties have of late been brought nearer home to us all by the grant of the franchise at a time of great social unrest and political transition which makes them not only more pressing but much more difficult.

What wonder if so many adopt a non-possumus attitude to their own and the country's loss.

Not only are the burdens doubled, but at the same time there is not nearly so much domestic service available, and the increased cost, together with straightened incomes, restrict the employment of the limited supply of anything which approaches skilled help.

For all these reasons it is urgently necessary to increase domestic efficiency so that only such labour and material may be expended as is necessary to obtain the desired result.

It is simply horrifying to look back at the sheer waste of energy and even of lives spent in unnecessary labour in the past : much of it seems to have been labour for labour's sake alone.

Now-a-days it is possible for those with imagination and a little available money to reap high interest on their expenditure by investing in various kinds of labour-saving devices and economy-devices generally. When as in the case of the fuel-less cookers, the device gives greater independence of the warning hands of the clock, it goes far to give the servantless housewife increased opportunity to live a wider life and maintain interests outside her home, to the great benefit of herself and the other members of the household

in the broadening of her outlook, her wider sympathies, and greater sense of proportion.

The innumerable devices for eliminating drudgery will in course of time solve the domestic problem by raising the status of the servant, enabling her to have more hours of leisure and giving her more interest, variety and responsibility in her work, so that it will be recognised as skilled work which at present is not generally conceded.

Members of this section in particular, are doing much to bring these devices within the reach of all by spreading information and so increasing the demand, which will eventually decrease the costs of production of what are, alas ! for the most part costly things.

At present, in the minds of many people, especially among servants, there is much distrust of new devices and a great unwillingness to concede their usefulness, though few carry this so far as the nursemaid who refused to use the thermometer in the baby's bath, for said she, " I know about the heat without that, if baby goes blue it is too cold, and if he goes red it is too hot." But beyond all labour-saving appliances and more leisure and better wages, the special domestic problem is best solved when the mistress will make the effort to be really interested in the maid's affairs and in her point of view, and to find scope for her special interests. It works very well in many cases and is frequently reciprocated, and indeed, in these enlightened days it is almost a superfluous suggestion, but the problem of cultivating the social interests of the domestic servant is far from being solved.

The home-ruler is confronted with three principal groups of problems: first, warming and ventilation ; this is largely a matter of house-planning and construction, and depends on the architect and builder ; it is dealt with in Section B of this Congress, but it is none the less intimately connected with domestic hygiene.

Second, the endless war against dirt and damage. The best weapons are the simplification of the things to be kept clean and the use of the right appliances for cleaning them, which appliances are also to be included in the things to be kept clean, a matter sometimes forgotten. The architect and builder are also involved here, and for some of us it is a case of saying " If only this had been there and that here, etc.," how much easier it would have been.

In the past, at any rate, some architects seem to have thought that exercise was a servant's chief need.

Third, the preparation of food.

It is this last which enslaves the home-maker to the tyrant clock, and gives her so little choice as to when she will do this or that ; the other matters

may be dealt with more or less when convenient. Till lately the hot meal was inexorable, made the domestic burden so in-elastic, and interfered so firmly with those extramural activities referred to before.

That is why I hail with delight such inventions as the fuel-less cooker, which enables one to play away even in that rigid hour preceding a hot meal, for the tyranny of work is broken when it is possible to get ahead with it or do it at another time.

Among the many valuable functions discharged by these congresses is that they serve as clearing-houses for ideas and inventions, where we may hope to see the balance impartially weighed between the rival claims of different methods under different circumstances, as between porous and impervious walls, and how they will affect pictures hung on them, gas versus electricity, and for what purposes coal or coke is better than either, and so on. Apart from such an institution as this, the ordinary person is dependent for his information on the special pleading of the producers of these things, and except by dearly bought experience, which may or may not be vitiated by accidental or special factors in the experiment, is not in a position to judge between the rival claims.

Some of the suspicion and distrust which mars our intercourse with our fellows, arises from the rarity of unbiassed or disinterested information.

Of course it is only natural that self-interest should make the most noise ; but beyond inspiring confidence in the trustworthiness of their own statements bodies providing opportunities for open discussion and disseminating disinterested information as does this Royal Sanitary Institute, add to the general feeling of trust and confidence of which our age stands in such great need.

An address on " Sunlight and Health," illustrated by lantern slides, was given by C. W. Saleeby, M.D., Ch.B., F.R.S.(Edin.), F.Z.S.

The following took part in the discussion on the address :—Dr. C. Rundle (Liverpool), Prof. H. R. Kenwood (London), Mrs. K. F. Wilkinson (Alderley Edge), Mrs. W. J. Stewart (Darlington), Mrs. Cloudesley Brereton (London), Mrs. Frank V. Snell (Dorset), Mrs. Chadwick (Bradford).

Education in Hygiene, by Dr. Alexander Cawadias, Head Physician of the Evangelismos Hospital, Athens.

THE role of education in the prevention of disease, in the promotion of a healthy life, must be studied from three points of view—(*a*) popular education in hygiene ; (*b*) popular propaganda in the preparation and application of public health laws ; (*c*) school-education in hygiene.

Popular Education in Hygiene.

To teach people cleanliness, correct feeding and drinking ; to show them when to work and how to rest ; to make them understand the noxious action of different poisons, such as alcohol and tobacco ; to inculcate the importance of open air life, and the principles of avoidance of contagion. These are the principal aims of popular education. But if we wish our teaching to be efficacious we must take different psychological factors into consideration.

History teaches us how the Jews, and, to some extent, the Moslems, combined their teaching of hygiene with their religious creed. In a strongly religious people the hygienic principles taught on the basis of religion gained in efficacy.

In the northern climates, and it must be so in England, where people read much more than in the south, the teaching by publications, and specially by newspapers and Sunday periodicals, must be taken into consideration.

On the contrary, in southern climates, where people live mostly out of doors, talking and discussing different questions, where people read less and are influenced specially by speech, the lecture is the best arm for promoting popular education. I speak particularly of Greece where we have a very good experience of the success of popular lectures for the promotion of hygiene.

Popular education in hygiene, especially in form of lectures, must be confided to medical men. For medical questions, nowadays, people have confidence only in scientists. A journalist, a statesman, a schoolmaster, a priest even cannot have a preponderant influence in hygienic questions. People have the fetichism of the scientist. In the army teaching of hygiene to soldiers by officers' lectures was a failure. On the contrary, lectures given by medical men were always efficacious.

I have found a good system, and have applied it in my country, where I have a clinical teaching, to stimulate young graduates to prepare these popular lectures. Such lectures given by young scientists, who have time enough to prepare them, and, presided over by well-known medical men, have a wonderful efficacy. Their effect is not only immediate. The young graduates who make those lectures will learn to continue through life this most important element of medical action, the apostolat in hygiene.

Popular Education and Legislation.

There is a difference between the preparation and promulgation of general political, judicial, financial laws and hygienical laws.

The general political laws are prepared by a strong current of public opinion. They are studied and formulated by a body of statesmen remaining in direct contact with the people who are to apply them. They are discussed in meetings, in newspaper articles. Everyone knows about them ; everyone, we may say, takes part in their elaboration.

On the contrary, hygienic laws spring from the mind of an aeropagus of scientists. They are neither prepared by public opinion nor understood often by those who are to apply them. This is all the more defective, inasmuch as the collaboration of the people who will apply these laws is more necessary than in the case of general political laws.

That is why in many countries hygienic laws are a dead letter. I have remarked a tendency to hide infectious diseases instead of declaring them. In countries where compulsory vaccination is enforced by law many try to escape that disagreeable formality. In some armies physicians report that the regulations for the prevention of venereal diseases are not followed. In some countries people spit, when the eye of the authorities is not on them, in the places where it is forbidden by law to spit. The application of hygienic law depends not only on the science of the medical men who prepared it, not on the administrative capacities of the authorities who have to superintend this application ; it depends on the collaboration of the people.

That is why we must, for a hygienic law, prepare public opinion. We must do it through the general arms of popular education : newspaper-articles, public lectures, cinematographic films, etc., taking into consideration the psychology of the people among whom we work.

We have remarked, in Greece, that newspaper-articles and public lectures on vaccination made more for the application of smallpox-vaccine than any laws and regulations. Newspaper-articles and lectures helped us more than any military order or disciplinary punishment to apply in our army the cholera and typhoid vaccination. I have been always opposed to those laws, often taken from other countries, and promulgated in countries where the conditions for their success are not the same, without even a preparation of public opinion.

The only laws destined to live are those which take into consideration the psychological conditions of the people, and which are prepared by a long work of popular education.

The great principle of modern science applied in hygiene, as in medicine in general, is to know how to individualise.

SCHOOL EDUCATION IN HYGIENE.

School-education is much more effective than the general popular education, because it is given to a prepared and cultivated class. It is very important, because school-pupils will assume the lead of the nation, and the growth of the importance of the country will depend on them. It is, therefore, necessary that a good hygiene should give them a healthy body and mind. Its importance extends to popular hygiene, because the example of the leading classes in these questions is followed by the other classes.

With our modern conceptions of life we may say that the teaching of hygiene in college, combined with notions of anatomy and physiology, is not second to either Greek or Latin in importance. As a science it gives the pupil notions of the greatest importance, notions of what life is. As a discipline it trains the mind to observe and to think scientifically ; it educates our two most important faculties, observation and reasoning, and not only memory. As a practical result it enables the pupil to gain a strong and healthy life, and to avoid diseases which hinder activity.

College-education must be divided in three. Literature ("Litterae," including Greek and Latin) to form the taste and character ; Mathematics to form the reasoning ; Science to develop the powers of observation and of reasoning. This last section has, too, immediate practical results. A good education is one in which these three factors are equally balanced.

In the scientific part of education the study of human physiology and hygiene must take the leading part. No other subject gives such great speculative and practical results. Unhappily that most important matter is neglected in the college-education of most countries, and even where it is applied it has not its proper predominant place.

CONCLUSIONS.

The hygienic teaching of the people must be an important object of every national public health administration. It must be given by medical men, and has to consider the psychological conditions of the people.

Every public health law must be prepared by popular propaganda with lectures, articles, etc. After the law is promulgated that popular teaching must continue to show the mode and the importance of the application of the law.

College-hygiene must be taught, combined with human anatomy and physiology. This teaching must form the basis of scientific teaching, and must not be second to either letters or mathematics, but equal to them.

The following took part in the discussion on this paper :—Dr. Andrew Trimble (Belfast), Prof. H. R. Kenwood (London), Mr. Fellowes (Bournemouth).

The Labour Saving House, by Mrs. C. S. Peel, O.B.E.

NOTE.—In a short paper it is impossible to treat of such a large subject in detail, and for that reason it will be best to deal here only with the urban house and the small house, though much that may be said of these is also applicable to the large house and the rural house.

There is more than one way of learning what kind of house is a labour-saving house : one of them is to live and do the work in the labour-making house, and that is how most of us learn. Let us then visit, in imagination, one or two of these destroyers of women's health and happiness. Home No. 1 is, I regret to say, a modern working-class house. There are three bed rooms, scullery-kitchen, living room, parlour, larder and bath room. So far so good—indeed, very good—but the kitchen-scullery is 7 feet 6 inches by 9 feet 6 inches, and three doors open out of it, making the fitting into it of all that is should contain a never-ending jig-saw puzzle. In it are the sink and a copper, but the cooking range is in the living room, and the larder is under the stairs by the front door, at the furthest possible point from the kitchen. While cooking the housewife continually needs water, which she obtains from the scullery sink, near by which she keeps her pots and pans ; the dresser, however, on which a considerable portion of the culinary utensils must be kept, is in the living room. So, you perceive, *the preparation of the simplest meal necessitates a tour of the ground floor and the use of two rooms.*

The first floor arrangements are also labour-making. Water for cleaning and washing must be carried up and down, slops carried down, and the only entrance to the bathroom is through the jig-saw puzzle kitchen-scullery.

This house, however, is far better than many, inasmuch as there is a parlour which serves not only as a recreation room, but is a place where the father may sleep if his wife is ill, and should there be a death in the house the parlour may serve as a mortuary.

Some of the people who plan houses appear to forget that people must be born in them and be ill in them, be old and infirm in them, and die in them, as well as live in them in the height of their youth and strength.

Another example of a modern labour-making, working-class house is on somewhat the same plan, but worse, inasmuch as the bath is actually in the kitchen-scullery, which is so small that the only space for a table is over the bath. The official who showed me this house explained that it was disheartening to provide baths for people who would not use them. On further enquiry I discovered that when a hot bath was needed the copper had to be lighted, the flap table cleared of all that was on it and fixed back against

the wall—therefore that part of the small available wall space could not be used for shelves—the hot water ladled out from copper to bath and ultimately, *because there was no waste pipe*, ladled out again and poured away via the sink. It is not surprising that such a bath is seldom used.

Another common example of labour-making is found in a middle-class house, in which the kitchen is in the front, behind it a second room, and behind that again the scullery, in which is the sink. From range to sink the distance is probably some 26 feet, whereas it should be within an arm's length.

Experiment was recently made of a distance walked while preparing a substantial family tea in such a house. It was found to be 350 feet. The re-arrangement and re-furnishing of the premises reduced the walking distance while performing the same task to 34 feet.

A type of house shockingly wasteful of labour is the basement house. Experimenting in an ordinary small town house it was found that, when serving meals for a family of six, a weight of about 220 lbs. was carried from basement to dining room each day, and most of it carried down again. This means that about one and one-third of a ton's weight of crockery, glass and food is carried up and down a steep hill of about 9 feet high during the week. Supposing that this can be done in the course of ten return journeys per day, the worker ascends and descends a steep hill of 180 feet, carrying heavy weights meanwhile, each day—1,260 feet per week of heavily weighted hill climbing.

It was also discovered that on six journeys from basement to top of a four-floor house and down again the worker would have climbed up and down a steep hill 240 feet high, a total of 480 feet during the day, or 3,360 feet per week, and when considering these estimates of unnecessary endeavour it should be remembered that house tending is not a five and a half day job, but a seven day, year in and year out, job.

Nations, it is said, deserve the governments which they have and, perhaps women deserve the houses they live in, but were it not an indisputable fact that practically every man keeps a servant—sometimes he realises this and calls her a servant, sometimes he speaks of her as his wife, or his landlady, and were it not that architects and builders are generally servant-keeping males, these monster houses would long since have ceased to be.

Having gained some idea of the time and energy wasted in badly planned houses, let us endeavour to decide what are the chief points to be considered when building a labour-saving house. They are :—

1, The plan of the house ; 2, The materials used in construction ; 3, Methods of providing heat for warming, for heating water and for cooking ; 4, Furnishing and fitting ; 5, First cost and last cost.

1. The Plan.

Not only the architect and the builder, but the general public pay too much attention to *labour saving appliances*, and ignore the primal necessity for *labour saving planning*. If the plan of the house is wrong no use of domestic tools, however clever, can convert a labour-making house into a labour-saving house.

When drawing his plan the architect must consider, (*a*) how best to group the rooms, having regard for their several purposes; (*b*) how to do away with unnecessary stairs and steps; (*c*) how to provide water where water is most needed; (*d*) how to provide suitable keeping places for food, cleaning apparatus, clothes, linen, goods not in every day use, and the perambulator and bicycle.

As regards room grouping, we are just beginning to realise the value of the combined kitchen-scullery, the combined pantry-servants' sitting room, and the dining room in direct communication with the service room, be it kitchen or pantry, and so arranged that meals may be laid and cleared in the shortest time and with the minimum of exertion. The architect should work with the furniture designer to produce attractive back to back communicating cupboard-sideboards, in which all the articles for table service may be put away from either dining room or service room. By such planning and by the use of a gas or electric heater and a "tray mobile" servantless service of meals is rendered easy, while the use of the "tray mobile," and of mechanical apparatus, such as vacuum cleaners and long-handled mops, etc., may considerably lighten the daily "doing" of the rooms.

The planning of a house in such a way that there are no unnecessary steps and stairs is important. To carry pails on the flat is less fatiguing than to carry them up and down—while to carry children up and down steep dark stairs is absolutely dangerous. No house in which all water must be carried up stairs and down again is labour-saving, while a down-stairs cloak room, with lavatory basin where those who come in wet and dirty may make at all events a preliminary toilette, saves much cleaning of passages and stairs.

When house planning, let the architect say to himself "everything in this house (including its inmates) must be kept clean, and the people in this house will eat three or four times a day. How can I best arrange my plan that the articles needed for cleaning, cooking and serving may be kept conveniently near to the rooms in which they will be needed?"

2. Construction.

The materials used in the inside of the house are important from the labour-saving point of view. For offices, bath rooms and lavatories, and in

very small houses, for the entrance and hall passages a good lino-surfaced concrete, which may be brought up into the walls, making a skirting unnecessary, is the best kind of flooring. It wears well, is easy to clean, and is not so tiring to the worker as a tiled floor. Grooved woodwork seems to have been invented in order to annoy housewives ; it is an abomination—a positive dirt trap. Painted wood needs to be washed, and, however carefully it is washed, in time the paint washes off and the expense of repainting must be incurred. Ungrooved polished wood is preferable, while the walls of offices, narrow hall-ways and stair cases where the traffic is considerable, should be of a material which, though pleasing in appearance, may be washed satisfactorily.

Window ledges quickly become shabby, and should be tiled, while the housewife's task is lightened by windows so hinged that they may be cleaned from the inside.

3. METHODS OF WARMING, WATER HEATING AND COOKING.

Neither the house nor its inmates can be kept in proper condition without a considerable quantity of hot water, and it is chiefly because hot water is so difficult and costly to obtain that the standard of cleanliness is not always as high as we desire. I protest strongly against the oft expressed opinion that working class people do not need much hot water. They do need it, and would generally make good use of it if they could obtain it cheaply.

It seems to me that the ideal arrangement is that hot water for cleaning and heating should be supplied in the same way that cold water, gas and electricity are supplied, and that cooking should be carried out by gas. The objection to having rooms heated by radiators will pass away (slowly, no doubt, for we are a conservative people), as such a form of heating is perfected, though in a damp and somewhat sunless country such as ours a certain amount of live heat may be needed. When, by the mere turning of a tap, we have hot water at command for heating (save, perhaps, for a live fire in one room) and cleaning, when we light the house by electricity and cook by gas we have done away with from half to two-thirds of the hard and dirty task which are performed in our houses to-day.

If this statement surprises you, think for a moment what work the use of coal entails. Coal is delivered and put into a cellar, causing a cloud of black dust. Coal boxes are taken to the cellar and filled and carried to the places—often upstairs—in which they are needed. Coal has to be lifted into grates—to keep a kitchen fire stoked the exertion is considerable—and the cinders sifted and the ash removed. Chimneys have to be swept, which necessitates preparing for and cleaning up after the sweep, coal scuttles, fenders and fire irons must be bought, cleaned and kept in repair, and when

coal is used a dirty atmosphere is created which depresses us mentally, deteriorates us physically and makes it necessary to wash clothes and clean the house far more often than would otherwise be the case.

The high price of coal and the shortage of domestic service have been in some ways a benefit to the housewife, inasmuch as they have increased the use of gas and electricity. Gas fires and gas cookers are now found in palace and cottage alike, and the use of gas has made it possible to convert great labour-making houses into groups of flatlets, such as persons of small income may afford.

The great hope of the woman in the little house, or, indeed, in the large house is that gas shall become still cheaper, for even if we have to wait for an in the slot hot water supply, there now exists apparatus—such as, for example, the cottage water heater, fitted with a cut-out valve, which makes it possible to heat a small or large quantity of water at will, and which is suitable for small households and flats—by the help of which we may, in places where gas is obtainable, make ourselves independent of coal.

Extraordinarily interesting experiments have lately been made by Mr. A. H. Barker, assisted by three women experts, and published by the instruction of the Fuel and Research Board. These show how complicated a problem is that of supplying apparatus suitable for domestic heating, water heating and cooking, which is at once economical of fuel and labour. Any range designed to heat the room and the water supply, the oven and hot plate, is astoundingly wasteful of fuel—one fire cannot do several jobs, and do them all well simultaneously. The result of trying to do so is to waste from about *75 to 95 per cent. of the fuel consumed and to pollute the atmosphere.*

4. Furnishing and Fitting.

Rooms too small for the number of people who will have to use them, and of the things to be put in them add to the housewife's difficulties, and we await provision of more fitment furniture and of moveable save-space furniture suited to small rooms.

The furniture designer should assist to turn out a room, help to carry furniture on to the landing and back, as does the good housewife, or, what is worse, clean a room where there is no place outside large enough to put the furniture, and then make experiment of the time and exertion saved by the use of fitment furniture, and save-space furniture. He should also be condemned to cook in and clean a small kitchen, which is cluttered up by a large open dirt and dust trap dresser (the top shelves so high that they cannot be reached without climbing upon a chair, the cupboards so low that it is necessary to grovel on the floor to get anything out of them), and a cooking stove with oven so placed that the cook must bend double when putting in

dishes or lifting them out. When designing furniture for small rooms he might also ask himself if tables which take up much valuable floor space, and consist only of a top, and, perhaps, one drawer, are the right kind of tables.

The American designer has decided that they are not, and produces a table which makes good use of every inch of floor space which it absorbs: he has also produced the kitchen cabinet, which is a vast improvement on the open dresser, and the revolving cupboard, which is an excellent much-in-little device. Attention should also be paid to bath room fittings. The ideal bath is the one with a rolled over edge which comes down to the floor, and leaves no place into which dust and dirt may penetrate. The bath on legs, placed close to a wall, is a dirt trap which practically defies all efforts to clean under and behind it satisfactorily. Bath and basin fittings should be such as may be wiped with a damp cloth and need no other cleaning.

5. First Cost and Last Cost.

A moment's consideration will show that the question of labour-saving cannot be divorced from that of first cost and last cost, for the house which is continually needing repair is a money and labour-wasting house. The effort to build a cheap house often results in the building of an expensive, penny-wise, pound-foolish house.

But if architects and builders have much to learn regarding the labour-saving house, the women who are to live in them have much to learn also. Some women are so conservative that no new idea appeals to them, others are so lacking in organising power and an understanding of mechanical apparatus that they would create unnecessary work in any house. Circumstances have made it necessary that we should adopt new ways of housekeeping, but knowledge of the best methods to adopt is not Heaven born, and thus there is a need for trained women to act as domestic advisers to architects, builders and housewives, and of other trained women to act as managers of working-class property in order that good modern houses by bad usage shall not in their turn deteriorate into slums.

The Elusive Ideal Home, by ARTHUR F. WICKENDEN, A.R.I.B.A. A.M.Inst.C.E., P.A.S.I. (MEMBER). Lecturer at The Imperial College of Science and Technology.

(ABSTRACT.)

THE quest of the ideal home has been in progress since man first trod this earth, and will probably continue so long as humanity needs shelter.

The popular conception of the ideal home must to a great extent be deemed a snare and delusion for the reason that the ideals of mankind are constantly changing, being fashioned mainly by the temporary predominant craving of the masses.

These changing ideals are turned to the utmost account by commercial adventurers, who are quick to create a ready market for numerous stunt methods of satisfying public whims. This is illustrated by the great number of devices, of varying degrees of efficiency, that are now on the market to accommodate the present-day popular notion that the ideal home is synonymous with the labour-saving house, in which manual labour will be practically abolished, thereby enabling unlimited spare time for enjoyment.

It is essential that the natural and laudable desire on the part of the community for the ideal home should be directed into proper channels, and not allowed to be perverted and exploited by insincere idealists with something to sell.

In order to arrive at the principles which may be considered as offering a sound foundation upon which to base the ideal of a perfect home, having regard to the ever-changing social and economic conditions of life, it is necessary to ascertain first the fundamental reason from which springs the desire for the ideal home.

This reason is the craving for health and happiness.

If such a statement is accepted, it is not difficult to mention certain definite elements essential to the realisation of the ideal.

Surely the most adequate and enduring basis upon which to attempt the superstructure of the ideal home is hygiene, using the word in its widest sense.

Thus the true ideal home is the house built in accordance with the laws of modern sanitary science and occupied by people properly educated in matters appertaining to public health and personal hygiene.

Sanitary building construction and public education in hygienic matters are not only powerful factors in themselves, but directly promote the development of other necessary conditions, such as bodily health, mental stability and a high moral tone.

A combination of these factors is, however, essential, for sanitary dwellings are of little avail unless the occupants have a good knowledge of, and are in sympathy with, clean and wholesome methods of living.

The importance of pure water-supply and adequate means of sewage- and refuse-disposal cannot be over-emphasised.

In the necessary practice of economy in present-day building operations, that branch of construction providing for sanitary accommodation and equipment must not be subjected to the " economy-axe " at the expense of efficiency.

In adopting labour-saving methods it is essential to discriminate between necessary and unnecessary work. Certain operations in house-management must always be better performed by manual labour than by mechanical appliances, if human intelligence counts for anything.

In aiming at the labour-saving house it is a wise policy to prevent rather than to cure; thus, for example, the primary consideration, both in house-building and home-furnishing, should be to eliminate or reduce the possibility of the accumulation of dirt and dust, giving but second place to the adoption of devices for their removal.

SECTION E.—INDUSTRIAL HYGIENE.

Constructive Welfare Work in Modern Industry, by Miss CONSTANCE SMITH, O.B.E., H.M. Deputy Chief Inspector of Factories.

THROUGHOUT the greater part of the nineteenth century isolated experiments in what is now called welfare work were made in their factories by enlightened employers. The most remarkable of these was undertaken by Robert Owen, some account of which finds a place in the histories of factory legislation. The closing years of the nineteenth and the opening years of the twentieth centuries saw a considerable development of this kind, systems of welfare directed to the better health and greater happiness of the operatives being established in a number of important works. Among the pioneers in this attempt to make factory life less onerous and more human the names of Messrs. Cadbury of Birmingham, Messrs. Rowntree of York, Messrs. Lever Bros., and Messrs. Robertson, both in England and Scotland, will occur to the mind. The schemes adopted included not only such provision as that of canteens and dining rooms, cloakrooms and washing accommodation, first aid and supply of protective clothing, now included among the commonplaces of elementary welfare, but educational classes, facilities for recreation, outdoor and indoor, thrift-institutions, and, here and there, encouragement to the workers to take part in organising their own comforts and amusements. The standard of provision was very unequal, a wide range of provision being generally confined to the bigger works, while smaller establishments made more modest experiments. In most cases the scheme included from the first the appointment of a welfare-secretary, supervisor, or superintendent (as these new officers were variously called), and when war broke out in August, 1914, from 25 to 30 factories had welfare-schemes in full operation under such special superintendents. At this date the idea of welfare, although showing signs of development, and having reached in a few instances a remarkable level of excellence according to the then existing standards, was still a plant of slow growth, and had not penetrated to any extent among the mass of factory-occupiers.

The exigencies of the war acted as a forcing house upon this slow growing plant, which had hitherto extorted admiration as a wonderful exotic rather than suggested itself as a product to be acclimatised in the general field of industry. The sudden and overpowering need for rapid mass-production,

imposing itself in circumstances which compelled the substitution of women for men and introduced into our factories an ever increasing army of new and inexperienced workers employed under abnormal conditions and frequently for abnormal periods, forced upon those responsible for authorising these methods of employment a special consideration of means whereby the health and fitness of this great body of operatives might be maintained.

It was clear that, apart from the question of humanity, the nation could not afford to let people whose capacity to produce satisfactory munitions of war and to supply the many needs of our armies in the field were a matter of national existence suffer for want of comfortable and healthy surroundings, lack of proper feeding, or due medical care. Hence the appointment of the Health of Munition Workers Committee, whose researches into such questions as hours of work, the hygiene of the factory and the organisation of welfare within the factory-walls, are and will remain of permanent value as a starting point for the profounder and more leisurely researches impossible in a war-period, but incumbent, now that the war is over, upon the responsible citizens of this country as stewards of the national well-being. Hence the establishment of the Welfare Department of the Ministry of Munitions and the imposition upon all controlled factories of certain welfare-arrangements as a condition of their working. Obviously these systems of welfare needed a supervisor or administrator. So the score and a half of welfare-superintendents who held appointments at the beginning of August, 1914, was suddenly expanded into a body numbering many hundreds. The expansion took place under the most unfavourable circumstances. The supply of suitable candidates soon became exhausted, and the stern pressure of the moment allowed little time for the training of those selected for an office of great responsibility, requiring knowledge, tact and judgment in equal proportions. Naturally there were many unsuitable appointments, especially made by those employers who accepted a supervisor unwillingly with a foredetermined intention of allowing her as little freedom of action as possible. The office itself was undefined, and the position varied from factory to factory. In one the welfare-supervisor was a mere overseer of cloakrooms and lavatories, forbidden even to speak a word of advice or remonstrance to the manager of the canteen; in a second all her activities were directed to speeding up production; in a third she might be found engaging, transferring and dismissing labour as far as women and girls were concerned, with large powers to prepare, present, and carry out schemes for the comfort and health of the whole body of operatives.

The Health of Munition Workers Committee was set up and the Welfare Department of the Ministry of Munitions established in 1915. By this time the system of Emergency Orders issued by the Secretary of State in

sanction of employment of protected persons at night, on Sunday, and in shifts (systems not permitted by the ordinary law) had become very numerous. They were being administered by the Factory Department and were weighted with special conditions as to meal-hours, pauses, breaks between shifts, provision of facilities for cooking and taking meals at night and for suitable supervision of women and girls. Out of the compulsory welfare schemes attaching to these Orders grew the provisions of the curiously named Police, Factories (Miscellaneous Provisions) Act of 1916, a small omnibus measure hastily passed to meet urgent needs. The welfare-provisions of the Act are confined to Part II. which consists of three sections only, but they constitute a very important legislative and administrative departure. Under them the Secretary of State took power to make Orders for securing the welfare of the workers, or of any class of workers employed in any factory or workshop where the conditions and circumstances of the employment, or the nature of the processes carried on might seem to require it. It is to be noted that these powers are not restricted to provisions for the welfare of women and young persons and that the Secretary of State may proceed either by industries or by single factories. As regards the matters to be dealt with, they include all those ordinarily coming under the head of Indoor Factory Welfare Conditions, such as arrangements for preparing, heating, and taking meals, facilities for washing, accommodation for clothing, supply of drinking water, protective clothing, seats, ambulance and first aid arrangements ; arrangements for the supervision of workers may also be required. The genesis of this new legislation is clear : it arises directly out of the existing Factory Acts, carrying the minimum of sanitation, hygiene and comfort which they require to a higher level ; in its standards it reflects those which have gradually been established in the regulations issued from time to time for the protection of workers in dangerous trades. It does not extend to any of those provisions for education, recreation and outside social activities included in the independent schemes of voluntary welfare which had been made by employers before 1916 or have been developed since, but it does take a new departure in two ways. First, it empowers the Secretary of State to legislate, if it appears to him that the health and interests of the workers demand it, for a single factory or group of works, as well as to issue a Welfare Order for a whole industry. It is easy to grasp the value of this power in special circumstances. Secondly, for the first time in our industrial legislation, it gives the workers in any factory or industry direct encouragement to work for welfare-conditions and to become associated with the management of welfare-schemes. The sub-section which deals with this last point offers the blessing of the Home Office to Works Committees.

Since the Act was passed industry has returned to a peace-footing. The Government Factories are gone; the controlled factories have escaped from the jurisdiction of the Ministry of Munitions and have in most cases returned to their old line of business. Necessarily and naturally, a good deal of war-time welfare has vanished along with war-time exigencies. But the value of a higher standard of working conditions in promoting health and happiness within the factory, and the better relations between employers and employed, which developed almost insensibly under the influence of capable, loyal and well-trained welfare-superintendents, whether men or women, had made too deep an impression on the wiser and more thoughtful type of employer to be lightly abandoned. Until the unfortunate slump in trade, which brought many of our industries almost to a standstill and seriously handicapped the progress and prosperity of all, welfare-conditions, modified to suit changed circumstances, survived from war-time to peace-time in about a thousand works. While that number has now unfortunately been reduced, owing to the pressure of the times, the reduction is more limited than might have been expected, and where welfare-activities have been curtailed they have for the most part not been wholly given up. Meanwhile some great industries, the cotton-industry is one, which were little affected by the war-welfare-movement, have by means of their principal Employers' Associations taken important steps towards the development of welfare-schemes. If these schemes have hitherto been only carried out in parts or their realisation has been for a time postponed, I am assured that in every case where they have taken any definite shape they have only been hung up and not scrapped. The number of capable trained welfare-supervisors out of a job at the present time is encouragingly small. While the amateurs and the failures have been swept away as the tide of war-manufacture receded, capable men and women have been maintained at their posts and have even found fresh posts open to them. Those employers who take welfare seriously are determined that in the future they will not have their schemes mis-handled or their factories disturbed by the experiments of well-intentioned but ignorant novices; they insist on training and preparation and, as a natural consequence, our Universities and other educational training grounds have made response to their demand. One year is now considered the shortest possible period of training for a welfare-worker destined for an Assistant's post in a well-managed factory, and the full course of two years needed for the Social Diploma in such Universities as Birmingham or Liverpool, which provides for practical work as well as for theoretical study and instruction, is increasingly required. The need of study and training becomes every day more apparent as the sphere of the welfare-worker is seen to enlarge

in the new lights brought to bear alike upon the physiology and psychology of industrial work. The investigations of the Fatigue Research Board have shown us that we are only at the beginning of knowledge in such matters as the bearing of periods of employment, breaks, feeding—upon the productivity of the operative; the work, but just started, of the Institute of Industrial Psychology throws open a vast field of study, in which those who live in daily contact with the workers as their supervisors and directors, must surely have a great part to play.

Scientific enquiry, the spirit of the most enlightened employers, and the trend of public opinion, are all working together for a great extension of those activities which are roughly grouped together under the name of "Welfare." But science, especially when hampered (as in the present case) by lack of money and staff, works slowly; all employers are not enlightened; and unassisted public opinion, though irresistible in the end, may take decades to penetrate the less accessible quarters of industry. Therefore, it is certain that as a nation careful of its workers' health, and jealous for that place in industry and commerce on which the very life of this country depends, we shall not be able to wait the deliberate penetration of industry by the welfare-idea without ourselves taking in our corporate capacity, any steps to hasten it. There will be, because there has to be, a large extension of legal welfare of the type set up under the Police, Factories Act of 1916. A simple comparison of figures will convince you of this necessity. In the short bumper-period after the Armistice about 1,000 factories had trained welfare-supervisors superintending organised schemes of welfare; but what is this figure when compared with the total number of factories and work shops in the United Kingdom, which is just short of 300,000*, not including the docks, wharves, quays, warehouses and buildings, for which the Factory Department is also responsible? Clearly, there must be some organised speeding up here, unless we are to call a deliberate halt in that improvement of the conditions of work which the better health of our people imperiously demands. We have not forgotten the revelations of the medical examination-room when, in the processes of conscription, the flashlight was turned on the physical condition of our industrial population.

I expect then a considerable extension of legal welfare provisions, both by General and Special Orders, an extension horizontal rather than vertical, mainly in the sense of covering an ever widening field of which the confines will in the end prove to be those of industry itself. Such extension has been quietly taking place for two and a half years. Record of the steps taken will be found in General Orders, such as that requiring a supply of pure drinking

* 298,874, of which 142,749 are factories and 156,123 workshops.

water easily accessible to all workers in every factory employing 25 persons, and in the First Aid and Ambulance Orders for the two great groups of metal working and wood-working industries. Also in a number of extremely valuable Special Orders for single industries of which the more recent apply to laundries (whether factories or workshops), gut scraping and gut washing, the gutting, salting and packing of herring, the making of glass, and the glass bevelling industry. A Draft Textile Order to cover not only the cotton and woollen industries, but every industry coming within the textile category, from lace to asbestos, has been circulated to the Employers' and Workpeoples' Associations, and only awaits the return of happier times to be carried into its further stages. But apart from these more formal extensions under the Act, the experimental sanction, for 5 years from 1920, of a system of two-day shift-employment for women and young persons over 16, has afforded an opportunity for improving the conditions of factories in a number of different trades by means of conditions introduced into the Secretary of State's Orders, granting occupiers permission to avail themselves of this system, which are special to each factory. By these means it is often possible to raise the whole level of working life in a factory where the Factory Act has been observed in the letter only, with small care for the spirit.

It is often asked whether the future holds a career for the welfare supervisor. It does, at the lowest as administrator of legal welfare, at the highest, as representative in the management of all that side of industrial activity which is concerned with the human partner in production. The welfare-supervisor of war-days tends to become, in the best organised works, the Employment Manager, or in the American phrase, Director of Personnel, to whom the operative, man or woman, boy or girl, stands in a special relation from the moment of entering into the factory and throughout his or her industrial career. Employers are finding out that if their undertakings are to be successful, they must study their workpeople at least as closely as they have hitherto studied their machinery or their markets, and they can only do this by the medium of a special officer trained to that end. To say this, is not to belittle for a moment the part to be taken by the operatives themselves in working out their own welfare. Already it has been found that it is in those factories where Works Committees are encouraged to form and to function freely, that the welfare-superintendent can best play a really valuable part. In such factories there is no danger that the inquisitorial method, or the rash and unwarranted attempt to pry into private affairs or to control private conduct, which did much during the war period to give welfare and the welfare-supervisor a bad name in Labour circles, will be revived to the injury of the common action of management and personnel in improving the factory-life, and, it may be, developing outside

the factory social relations which shall help to confirm and develop good feeling. The day of paternalism is over in industry ; the day of co-operation has begun.

A few words must be said at the close of a paper which can only deal sketchily with a large and far-reaching subject, of the international aspect of welfare-work. For it has already an international aspect. Early in this month I attended, in France, the First International Conference of Welfare Workers, to which 12 countries sent representatives. In these countries, one of which was China, the levels reached differed greatly, as did the age of the experiments reported, and the outlook of those actively engaged in the work. The United States had the biggest and most magnificent examples of voluntary welfare-work to show, while Great Britain stood alone in being able to offer a definite experience in legal welfare. There was, wisely, no attempt to approximate to any uniformity of methods in work as yet in an experimental stage and directed to very varying ends ; but one feature was common to all the delegations : faith in their work and enthusiasm for it. Nor was this feeling confined to the welfare-superintendents ; it was evidently strong among employers also. Great interest was manifested in the British welfare-work among boys and its extension to adult men, and France offered her thanks to Britain as a pioneer in the movement and to the British Welfare Worker's Institute as a shining example in the effort to insist that in this new provision responsibility must go along with due training and preparation.

Sickness in Industrial Communities, by E. A. Rusher, F.I.A., F.S.S.

OVER three-quarters of a century have elapsed since Neison and Finlaison called attention to the value of investigation into the incidence of sickness as a guide to hygienic conditions in various occupations. Neison indicated the importance of analysing not only the amount, but also the cause of such illness, but in his day records showing the latter were kept only in very rare instances. The primary object of all investigations of this description is to discover whether there exists some disease to which persons engaged in any particular occupation are specially subject. During the past few years the great development of the study of the human element in industry has attracted a pronounced desire for further information. At the same time, the advent of the system of sickness-insurance as a national undertaking, both on the Continent and (more recently) in this country, has opened up an avenue which has further stimulated the desire for inquiry.

Perhaps the most complete analysis of this kind on the Continent is that of the Leipzig Experience, 1887-1905, made possible by the introduction of the system of State sickness and invalidity insurance in Germany over 30 years ago.

This experience gives the number of cases and duration of sickness analysed into causes in 24 main industries, sub-divided, where the facts were sufficient in number, into 108 groups of trades for men, and 79 for women. The causes are set out under five main headings, divided again into no less than 335 sub-headings.

The main value of this elaborate investigation is that, in default of any similar analysis in this country, it forms a basis for comparison; though it must be confessed it is a somewhat unsatisfactory one. The general rate of sickness shown is heavy, and, in the case of women, married and single are not separated.

National Health Insurance came into operation in the United Kingdom in 1913. The fact that for nearly a decade many millions of industrial workers have come within its provisions has raised hopes of obtaining valuable information as to occupational sickness from an analysis of the records.

The attention of the Industrial Fatigue Research Board was naturally directed to this promising field of inquiry, and investigations were undertaken into the sickness-incidence in several industries, including the iron and steel, foundry, boot and shoe, and laundry-workers.

In none of these was it found possible to obtain particulars for the whole of the workers. Employees have freedom of choice as to which

approved society they should be insured through. The great majority chose the large general societies, in whose records it is practically impossible to distinguish the occupations, as the occupation given was the one in which a member happened to be engaged at the date of entry, which may have been over 10 years ago. This affects female lives perhaps more even than male. Hence it was impossible to use these records, and attention was directed to such approved societies as restricted their membership to a particular trade, mainly of the Trade Union order. The numbers in these were only a small proportion of the whole body, but it was considered that they might be taken as fair samples, and enquiries showed that in the case of men it was sufficiently accurate to assume that all the members belonged to the particular trade in question.

The great drawback is that most of the period has been abnormal, in the first instance, from the misunderstanding and difficulty inevitable to the early stages of such a vast change in industrial conditions, and afterwards from the operations of war and its consequences. As far as the men were concerned, it was comparatively easy from the records to eliminate the period during which they were absent on war-service; but the case of the women was not so easy, as a large number of them are believed to have changed their occupation during the war, attracted by patriotism or high wages to other occupations, such as munition-work. These women still remained in their old approved society without, in many instances, notifying their change of occupation. This must be borne in mind when considering the data relating to female lives in the laundry, and, to a less extent, in the boot and shoe-industry.

For the results of the investigation into the iron and steel-industry, it is sufficient here to refer to the Report No. 5, " Fatigue and Efficiency in the Iron and Steel Industry," by H. M. Vernon, M.D., published in 1920 by H.M. Stationery Office. Only one point brought out need be mentioned to show its value. The puddlers were found to have an excess of sickness from rheumatism over the average of the whole industry of no less than 78 per cent. They had also an excess from respiratory diseases of 35 per cent. This was found to be probably due to the custom followed by many puddlers of alternating extremely hard work, generally of about 20 minutes' duration, with periods of similar length, during which they rest or do light work, thereby incurring great risk of chill.

Iron and steel was a protected industry; that is to say, one in which a considerable number of men of military age and capacity were allowed to remain at work, or were even in some cases brought back from active service. The boot and shoe industry, on the other hand, was unprotected; that is to say, it had to contribute a full quota of men for active service. Hence, in

TABLE A.

SICKNESS FROM VARIOUS CAUSES IN THE BOOT AND SHOE TRADE, 1915-19.
NUMBER OF ATTACKS PER ANNUM AMONG 1,000 MALE WORKERS IN EACH AGE GROUP,
(EXCLUDING ACCIDENTS, AND ILNESS DUE DIRECTLY TO WAR.)

Occupation.	Total Years of Life observed.	Influenza.	Rheumatism.	Phthisis and Tuberculosis.	Respiratory System.	Circulatory System.	Digestive System.	Nervous System.	Skin.	Other Causes.	Total.
	16–24.										
All	12,060	92	19	12	55	14	67	14	39	32	344
A.—*Service Men.*											
All	6,740	82	21	10	51	15	79	17	44	36	355
Lasters and Makers ...	3,601	78	20	10	50	14	82	16	53	31	354
Finishers...	1,191	88	27	8	48	20	88	17	44	39	379
Clickers	1,641	84	19	9	55	14	71	20	26	43	341
Pressers	307	94	29	23	52	3	69	13	42	33	358
B.—*Non-Service Men.*											
All	5,320	105	16	14	60	14	51	10	32	26	328
Lasters and Makers ...	2,905	113	17	12	55	12	55	9	36	23	332
Finishers...	896	85	27	17	61	25	60	16	39	34	364
Clickers	1,290	109	6	16	69	8	39	7	20	29	303
Pressers	229	52	13	4	70	31	44	18	26	26	284
	25–34.										
All	16,528	77	24	18	44	15	53	17	24	26	298
A.—*Service Men.*											
All	9,260	68	21	13	39	12	58	18	24	27	280
Lasters and Makers ...	4,496	67	20	9	38	11	62	21	26	27	281
Finishers...	2,322	74	17	21	42	17	56	15	22	26	290
Clickers	1,821	63	25	15	34	9	50	19	17	31	263
Pressers	621	68	22	19	50	13	53	13	31	23	292
B.—*Non-Service Men.*											
All	7,268	88	28	24	51	17	47	15	25	25	320
Lasters and Makers ...	3,436	83	29	23	42	16	47	15	27	24	306
Finishers...	1,736	81	28	21	63	14	47	16	33	21	324
Clickers	1,507	104	29	35	52	20	39	14	19	28	340
Pressers	589	98	15	12	59	22	70	15	12	31	334
	35–44.										
All	22,580	60	30	12	39	14	40	14	24	24	257
A.—*Service Men.*											
All	5,141	59	39	11	42	20	47	20	26	29	293
Lasters and Makers ...	2,481	61	41	9	50	23	45	20	25	33	307
Finishers...	1,488	60	47	7	41	18	44	22	29	28	296
Clickers	875	56	19	22	34	5	62	21	26	21	266
Pressers	297	44	34	10	14	40	30	7	27	30	236
B.—*Non-Service Men.*											
All	17,439	61	27	12	38	13	37	13	23	22	246
Lasters and Makers ...	8,951	66	27	12	39	13	36	12	23	21	249
Finishers...	4,302	53	32	16	35	13	42	12	25	23	251
Clickers	3,151	57	23	10	42	14	35	16	20	24	241
Pressers	1,035	65	22	8	32	6	30	15	15	26	219
	45–54.										
All	19,915	57	33	7	45	14	35	14	25	27	257
A.—*Service Men.*											
All	814	63	64	25	83	26	45	41	39	39	425
Lasters and Makers ...	412	61	61	27	85	31	41	39	36	39	420
Finishers...	278	61	75	21	90	22	47	40	40	43	439
Clickers	94	96	21	32	53	11	64	64	64	10	415
Pressers	30	—	130	—	100	33	33	—	—	100	400
B.—*Non-Service Men.*											
All	19,101	56	31	7	44	13	34	13	25	27	250
Lasters and Makers ...	10,153	56	32	8	47	14	39	12	27	28	263
Finishers...	5,428	54	29	6	45	13	33	13	21	25	239
Clickers	2,676	63	27	3	31	11	25	19	26	20	225
Pressers	844	58	46	5	34	17	17	11	9	37	234

investigating the sickness in the latter, it was necessary to distinguish between Service-men, that is, those who at any time during the war were on active service, and the rest, or non-Service, men. The rate of attack per 1,000 is shown in Table A in four age-groups, for each of nine main causes, and also for all causes combined. Illness due directly to consequences of the war and accidents have been excluded.

The interesting fact is brought out that at all ages, except 25–34, the Service-men experienced a higher rate than the non-Service. As the former were medically selected for service, it would, at first sight, have been expected that they would have shown a lower rate. This apparent anomaly arose from the fact that the period for which the men were on active service was necessarily cut out from the analysis, hence the Service-figures relate mainly to men who, through wounds or illness, had become unfit for active service, and had returned to their ordinary occupation in a sub-normal physical condition.

The Registrar-General's returns of occupational mortality show that males engaged in the boot and shoe-trade suffer a very heavy death-rate from phthisis. The figures relating to non-Service men, given in Table A, seem to suggest that this excess probably arises at ages under 34 amongst finishers and clickers. It should be pointed out that the causes of sickness given on the certificate for purposes of National Health Insurance cannot, from their very nature, be so accurate as the causes of death given in the Registrar-General's mortality-returns. In the former, in many cases, the cause of illness stated indicates only a first opinion which subsequent diagnosis may prove to have been inaccurate. It is almost certain, for instance, that a proportion of cases tabulated under Respiratory and Influenza should have appeared as Phthisis and Tuberculosis.

The high rate of attack from influenza among the non-Service men is very marked at all ages and occupations, and is largely due to the great epidemic of 1918.

In Table B are given the figures for female lives engaged in both the boot and shoe and the laundry-industries. These are particularly instructive, as they differentiate between married and single workers. In both industries the married show an excess over the single of sickness from all causes combined at all age-groups up to 45, beyond which the numbers are so small as to make comparisons unreliable.

In the boot and shoe-trade, married women also show an excess at all age-groups from diseases of the respiratory and digestive systems, and in the later age-groups from rheumatism. Had the duration of illness also been taken into account, these differences would have been even more

TABLE B.

SICKNESS FROM VARIOUS CAUSES IN THE BOOT AND SHOE AND THE LAUNDRY TRADES 1915-19.

NUMBER OF ATTACKS PER ANNUM AMONG 1,000 FEMALE WORKERS IN EACH AGE GROUP (EXCLUDING ACCIDENTS AND ILLNESS DUE TO THE PUERPERAL STATE.)

Occupation.	Total Years of Life observed.	Influenza.	Rheumatism.	Phthisis and Tuberculosis.	Respiratory System.	Circulatory System.	Digestive System.	Nervous System.	Skin.	Other Causes.	Total.
	16–24.										
A.—*Spinsters and Widows.*											
Boot and Shoe Trade ...	13,877	91	15	5	41	42	85	16	36	30	361
Laundry Workers ...	2,061	46	7	3	36	19	24	7	15	21	178
B.—*Married Women.*											
Boot and Shoe Trade ...	1,573	83	16	9	46	56	95	27	23	39	394
Laundry Workers ...	469	45	11	2	30	34	26	15	4	36	203
	25–34.										
A.—*Spinsters and Widows.*											
Boot and Shoe Trade ...	3,823	77	10	6	36	28	65	24	15	21	282
Laundry Workers ...	218	50	17	15	22	15	18	12	11	35	195
B.—*Married Women.*											
Boot and Shoe Trade ...	3,315	80	19	5	47	26	82	19	17	23	318
Laundry Workers ...	1,045	56	13	2	33	28	29	5	15	44	225
	35-44.										
A.—*Spinsters and Widows.*											
Boot and Shoe Trade ...	1,019	69	12	4	26	12	47	26	19	23	238
Laundry Workers ...	400	40	18	5	10	20	25	3	20	22	163
B.—*Married Women.*											
Boot and Shoe Trade ...	1,199	65	25	3	54	17	73	24	10	33	304
Laundry Workers ...	705	35	26	6	31	21	50	14	17	44	244
	45–54.										
A.—*Spinsters and Widows.*											
Boot and Shoe Trade ...	281	92	25	—	50	11	46	18	18	39	299
Laundry Workers ...	270	44	37	—	89	11	44	19	15	52	311
B.—*Married Women.*											
Boot and Shoe Trade ...	277	94	18	—	69	4	72	32	29	39	357
Laundry Workers ...	470	36	77	9	40	30	30	13	13	38	286

marked ; that is to say, that among the married women attacks of illness lasted longer than amongst single.

A striking feature of the laundry-workers' experience is that whilst their general sickness was less than that of the female boot and shoe-operatives, they experienced about double the rate of attack from rheumatism in all age-groups except 25–34. The number of lives dealt with in the laundry-industry was very small, but the difference is so large that it is unlikely that it is due to errors of random sampling. On the other hand, the boot and shoe female workers, both married and single, show a markedly higher rate of attack from respiratory diseases and nervous disorders.

This brief summary of results already achieved by the tentative effort of the Industrial Fatigue Research Board suggests the necessity of development. The Board being unable to proceed further, trade organisations must now take up the work in the interest of the industrial community, seeing how closely it bears upon both the efficiency and the comfort of the worker.

Tests of Aptness for Employment, by A. G. S. Mahomed, M.R.C.S.

WE like to do what we can do well. It is therefore desirable to ascertain what things a person is likely to do well. The object of the tests I am about to show is to discover a bent or aptness, or the reverse, towards a proposed employment in applicants examined under the Factory Act. Obviously the educational standard attained is an important point to consider, and for years I have noted this in the general registers. Unfortunately, I have not the means of comparing their later career with their elementary attainments. This might be fruitfully done in manufacturing districts where hundreds of young persons are examined every year, and where whole-time officers are employed.

As far as I know the managers of factories do not use the educational or any other test in selecting young persons for employment, or in grading them for pay. In this district, as far as females are concerned, the millinery and dressmaking-industries absorb a larger proportion of children who have passed Standard VII., and laundries receive a larger proportion of Standard V. But an educational test alone is not sufficient. Education is a necessary part of the equipment of a successful worker ; but it is not the be all and end all.

Inherent capacity, and emotional force are important, and perhaps more important still is the group of psychologic attributes that go to form character. In the majortity of cases a child does not attain to ex-VII. or higher grades by dint of drilling and a carefully arranged curriculum, but a bright child has no difficulty in entering high standards, and a dull one remains in the lower grades. We are not in fact all born equal ; and education is not the boon it is thought to be by many. Given certain qualities and natural endowments the possessor will educate himself, and this is the best sort of education there is.

One of the objects of education is to instruct, to give some knowledge to the ignorant ; but this is not, or should not be, the only aim. A greater object is to develop the mind of the child so that it can acquire information for itself ; and particularly that, when confronted with fresh facts and circumstances, it should display a sane and broad reception of them. May I ask you to consider for a moment the lives of Horace Walpole and Lord Chesterfield and compare them with those of Henry VII and Abraham Lincoln.

Walpole was a man of good education, he was partly an invalid, but he saw everything he could see, heard everything he could hear, gossiped with

everybody that was worth gossiping with, and wrote down his impressions in his letters to friends.

In the same way Lord Chesterfield not only acquired the language of the French but their manners, so that he was often mistaken for a Frenchman, and he became a powerful influence. In Spain he did the same. In the Houses of Parliament he became an incisive critic of Walpole's government; next a successful Lord Lieutenant of Ireland. George II., though not on good terms with him, yet had to send him to the Hague to carry through diplomatic arrangements with the Dutch.

Compare these two men with Henry VII and Lincoln. Henry passed a youth of intrigue and plotting, succeeded to a most unstable throne, a nearly bankrupt exchequer, and a nation exhausted by civil war. He became about the most powerful monarch in Europe, laid the outlines of a modern diplomacy, developed the Navy, and taught his people to pursue commerce. He was an untutored genius.

Lincoln was a man of modest acquirements, but he had emotional force, combined with shrewdness. These gifts thrust him to the front in a period of national excitement. He dominated the storm, and compelled it to the course he had in view.

Here there are two men who owed their success to education, and self education; and two others who owed little to education and much to natural endownments.

There is no way of gauging emotional equipment, or character, except long experience or posthumous study. But yet we may do a little to explore the natural qualities that determine educatableness.

In America large numbers of children have been subjected to the Binet-Stanford tests, and it is claimed that they have confirmed, or sometimes corrected, the educational grading. The new American Army was also largely examined by the Army psychological tests which were founded on the Binet-Stanford system. That system requires from 30 minutes to 1½ hours to apply, but then a number can be examined simultaneously.

In the same way the Army-tests were applied to the entire Army excepting field and general officers, in 35 camps with a personnel of 120 officers, 350 men and 500 clerks.

The War Office claimed great success from the employment of the system.

It is too large a task to describe and discuss the Binet-Stanford system. As left by Binet the scale consisted of 54 tests so graded "that the easiest lie well within the range of normal 3-year old children, while the hardest tax the intelligence of the average adult."

Stanford brought the tests up to 90. Most of the tests are really tests

of education, but some test mental qualities, such as comprehension, for instance, "What would you do (*a*) if it is raining when you start from school? (*b*) if the house is on fire? (*c*) if you miss your car (or train)."

Further tests are the explanation of fables, *e.g.*, "Hercules and the Wagoner," "The Maid and the Eggs," also the interpretation of pictures; finding similarities such as "compare coal and wood," "a ship and an automobile," defining abstract terms. The best mental test is reversing the hands of a clock. Suppose they are as at 6.22. Now imagine the short hand is the long one and the long becomes the short hand, what time will it show? Doubtless some of these tests yield valuable results. The objection as applied to factory-children is the time they take. The fee for examining at the surgery before the war was 6d., now it is 1s. You see not all Government departments are habitual wasters of public money! Of course at present one is not required to gauge natural endowments, but some day it may be thought worth while to do so.

It is the employer's interest, if he can be brought to recognise it. What we want to discover is not the *educated*, the standard discloses that as far as it goes, but the *educable*.

One of the factors we may estimate is how far a child can be brought into rapport with the outer world by the due recognition of the impressions conveyed by his special senses. Some people can see what others cannot see. Some can receive by touch information denied to others.

(1) Here is an apparatus for testing colour-sense: I take a slip of colour and ask the applicant to match it. It tests other things than colour. There is precision of movement. If you turn the wheel too quickly you overshoot the mark.

(2) Here is another test: These cards have designs. There are six designs and thirteen specimens of each design. They should be sorted into packs, and the time taken. It requires attention, memory, and a certain facility for handling.

(3) This test is to trace with a pencil a fretwork design. It is very simple. It may be made a time-test, but faithfulness of reproduction should be made the greater mark gainer.

(4) This box contains a few well-known objects. It should be open five seconds, and the candidate asked to state what objects he recognised. This is a good test of observation and concentration.

(5) This test is designed to estimate accuracy of touch. The hands are placed in the bag, and an object is introduced by the metal cap at the bottom. Most of the objects are easily identified, but if not named a description of it should earn nearly full marks.

It would be easy to test the sense of smell with such scents as eucalyptus,

turpentine, lavender, iodoform, paraffin, but it seemed not important enough except in special industries. Hearing could be tested by a tuning fork or a syren. The candidates should be given marks for each test, with a suitable allowance when a time-test is used. If the marks for each test were added together, with twice the school-standard, it would give a number which might be considered to represent his ability, *e.g.* :—

Five tests all passed at 5 marks each	=	25
Suppose he was Standard VII (2 × VII)	=	14
Ability	=	39
Five tests passed at 4 marks each	=	20
Suppose he was Standard VI (2 × VI)	=	12
Ability	=	32

Building Bye-laws.

In May, 1922, the Council appointed a Committee to consider the Ministry of Health's Model Bye-laws, and the London County Council's Drainage Bye-laws, with a view to making any suggestions with regard to amendments of the sanitary provisions contained in these Bye-laws.

The Committee have held several sittings, and will be glad to have brought to their notice any special information bearing on the subject.

They have recently received from the Ministry of Health the following Circular, with a request that they will make it known to those associated with the Institute.

BYE-LAWS WITH RESPECT TO NEW STREETS AND BUILDINGS.

SIR,

1. I am directed by the Minister of Health to bring to the notice of your Council the urgent importance of revising any bye-laws in force with respect to new streets and buildings if this has not recently been done.

There is still a large number of local authorities who for many years have not altered their bye-laws, which in consequence are antiquated.

It cannot be too strongly emphasized that a local authority are not warranted in retaining bye-laws which may hinder private enterprise and are not really required for safety or sanitation.

At present local authorities are able to give some measure of relief from inelastic bye-laws by consenting to a building under section 25 of the Housing, Town Planning, &c., Act, 1919. It has to be remembered, however, that this provision is only temporary, and, in any event, is not a satisfactory method of affording permanent relief. Moreover, the section deals only with buildings for human habitation, not with commercial or industrial buildings.

2. The model bye-laws as to new streets and buildings have been frequently revised, particularly in the light of the experience of local authorities; and the present models are markedly different from the earlier ones. While they secure all the safeguards which local authorities, in the interests of the community, can properly require under the authorising statutes, they afford a wide margin of elasticity; and the Minister would urge local authorities who have not already done so to revise their bye-laws on the lines of the latest models.

The Departmental Committee on Building Bye-laws recommended that all bye-laws with respect to new streets and buildings should be reviewed at least every ten years; the Minister is inclined to think that this task should be undertaken at even shorter intervals in order that the local authority may be quite sure that their bye-laws provide adequately for modern requirements.

3. The Minister will be glad to know what measures are taken in this matter by your Council, if their bye-laws have not been revised since the beginning of 1914; and his officers will be glad to render any assistance which they can in any revision which is undertaken.

Condensed Milk Regulations.

The attention of the Council of the Institute was drawn to a proposal by the Ministry of Health to issue regulations with regard to the sale of condensed milk.

The lines upon which the regulations were to be framed were as follows :—

I. Standards.

All condensed milk must comply with one of the following standards :—

	Percentage of Milk Fat.	Total Milk Solids.
Full cream sweetened	9	31
Full cream unsweetened	9	31
Skimmed sweetened	–	26
Skimmed unsweetened	–	20

II. Labelling.

(1) Skimmed milk must be conspicuously labelled " Unfit for Infants."

(2) Every tin must bear a declaration in a prescribed form stating the equivalent volume of average fresh milk (or fresh skimmed milk).

(3) If any other declaration as to dilution, etc., is placed on the label, it must be accurate.

The Council referred this matter for consideration to members specially conversant with the points raised, and acting on their advice a letter was sent to the Ministry of Health, submitting the following suggestions :—

(1) It is of very little importance what the composition of a condensed milk may be, so long as the diluted product corresponds to average fresh milk.

(2) The suggested " standards " are therefore unimportant except in so far as they may protect a purchaser from buying excess water at the price of milk.

(3) The suggested standards would rule out all milks less condensed than to one-third of original bulk, thus excluding many imported milks condensed only to one-half of the original bulk. These less condensed milks are widely used and in many cases preferred to the more condensed varieties, owing to an impression (probably unfounded) that they have a less cooked taste.

(4) It is the public as users, rather than as purchasers, that requires protection, and the essential part of the regulations therefore is the labelling.

Condensed Milk Regulations.

(5) In the absence of the "prescribed form" it is difficult to criticise para. 11. (2), but the present wording is unsatisfactory. Few consumers are interested in "the equivalent volume of average fresh milk" produced by a whole tin of condensed milk. The majority would be better served by a formula that :—

"x" parts of this milk mixed with "y" parts of water produce "x" + "y" parts of average fresh milk.

This should be on a label without any other printed matter except as in paragraph 7 below.

(6) The requirements as to chemical composition of the reconstituted milk, should then be :—

			Milk Fat per cent.		Total Milk Solids, per cent.
Full cream unsweetened	not less than	...	3	...	11·5
Full cream sweetened		...	3	...	11·5
Skimmed sweetened		...	–	...	8·7
Skimmed unsweetened		...	–	...	8·7

(7) The words "Unfit for Infants" to be shown on skimmed condensed milk should be printed in capital letters not less than $\frac{1}{2}$ in. square (compare Section 6 of the Margarine Act, 1887). The existing regulations (Section II. of the Sale of Food and Drugs Act, 1899) about marking are too indefinite as to the size of type. These words should be on the special label referred to in para. 5 above.

These suggestions have been acknowledged by the Ministry.

The new regulations have not yet been issued.

OBITUARY.

Arthur Henry Reid (Fellow).

Notice has been received from the South African Branch of the Institute, of the death of Mr. Arthur Henry Reid, which occurred at Cape Town on October 18th last. Mr. Reid was a well-known Architect in South Africa, and was intimately associated with the Institute's work in the Union. He had been a member of the Institute since 1895, and was elected a Fellow in 1903. He was one of those actively concerned in extending the Institute's Training and Examination work to South Africa in 1902, and he was prominently associated with the South African Board of Examiners from its inception, occupying for a time the position of Chairman of the Board, and he took a very great interest in the Training of Sanitary Inspectors. He also rendered valuable assistance to the South African Branch of the Institute and for several years he acted as Treasurer of the Branch.

During the course of a long life in South Africa—he went there first in 1877—Mr. Reid took an active part in public affairs and served on several public bodies and associations. He was keenly interested in the Association for the Prevention of Consumption, of which for a time he filled the office of President ; he had also been President of the Cape Institute of Architects.

Mr. Reid attended meetings of the Institute in England on many occasions, and he always took a keen interest in the progress and development of the Institute's work. His death will be deeply regretted and his loss will be much felt by the Institute for whose objects he laboured so devotedly, and also by his colleagues of the South African Branch, and by his many friends in England and South Africa.

THE ROYAL SANITARY INSTITUTE.

FOUNDED 1876.

REVIEWS OF BOOKS.

ISOLATION HOSPITALS.

By H. Franklin Parsons, M.D., D.P.H. Second Edition, revised and partly re-written by R. Bruce Low, C.B., M.D., D.P.H. 8vo., 281 pp., illustrated. 1922, Cambridge. The Cambridge University Press. Price 25s. 0d.

This excellent work has reached a second edition. The need for the re-issue has long been felt, alike on account of the almost unique information the book contains and the changes which have taken place in expert opinion with regard to sanatoria since the first edition appeared.

The first chapter is purely historical, tracing the growth of the isolation hospital idea from the primitive "lazar" or leper-house of the 8th century —or even earlier—to the costly and complete institutions for the isolation and treatment of the infectious sick upon modern lines, which were erected in large numbers throughout the United Kingdom towards the end of the last and about the beginning of the present century.

In dealing with the vexed question of the utility of isolation hospitals, the writer arrives at practically the same conclusion as most other modern experts who have dealt with it, viz., that while it is hard to justify their existence on statistical grounds, except for certain diseases, of which small-pox is the best example, it would be difficult to do without them, especially in urban communities as at present constituted, even for those diseases in connection with which their success has been most seriously challenged.

In writing of sites for isolation hospitals, the author very rightly emphasizes the advantage of draining such hospitals into existing sewers, and the difficulty and expense of other methods of disposal for their sewage, and makes light of the bogey of infection from sewers so utilized.

For permanent hospitals the schemes and designs of the Local Government Board and the Ministry of Health are closely followed.

The case of small-pox hospitals is adequately and judicially dealt with in a separate chapter in special relation to the question of "aërial convection." "But," as the author observes, "the acceptance or rejection of the hypothesis of aërial convection does not in practice make so much difference as might be supposed," except, he might have added, that, if the hypothesis is unfounded, the need for more strict administration is accentuated.

The chief point brought out by the chapter on the removal of patients to hospital is the revolutionary change in road transport for this and other purposes effected by the almost universal substitution of motor for horse-traction.

The criteria governing the discharge of patients from hospital are necessarily of the highest importance, and the practice and experience of various hospitals and authorities are described and discussed at some length, with the view of determining the safest line of action in this regard.

The concluding chapters deal with infectious diseases and the Poor Law, with the hospital system of the Metropolitan Asylums Board, with the cost of isolation hospitals, with sanatoria for tuberculosis, and with examples of isolation hospitals, and the last two chapters are illustrated by engravings of plans and elevations of hospitals and sanatoria, judiciously chosen as affording examples to meet the needs of large and small districts variously circumstanced and constituted.

This book contains much valuable information in a relatively small compass, and may be confidently recommended as a highly useful and entirely reliable guide to Local Authorities and their officers in dealing with the difficult problems of hospital and sanatorium isolation for all diseases calling for such treatment in the United Kingdom. A very complete bibliography is furnished at the end of every chapter, which constitutes one of the best features of the work, as, by its aid, the opinions of authors who have contributed to the literature of the subjects dealt with in recent years may be readily consulted.

P. B.

Rickets.

By J. Lawson Dick, M.D., F.R.C.S. 8vo., 488 pp., illustrated. London, 1922. William Heinemann. Price 25s.

Dr. Lawson Dick tells us a fascinating story. The men of the Bronze and Stone Ages did not have rickets. They ground their teeth down with hard food, and had alveolar abscesses but no rickety hypophasia. Rickets should be called the " Flanders " disease, and not the " English " disease, as it was first known in the towns of the Hanseatic League. The Dutch painters used rickety models when Bruges was a town of 200,000 inhabitants and the commercial capital of Europe. The industrial slums which sprang up in Flanders later developed in England after Stuart times, as the English towns and industrial system developed. Although the slum environment of an industrial town is the great cause of rickets, Dr. Lawson Dick points out that in Glisson's time the wealthy produced a slum environment for their children by bottling them up from fear of the plague and other epidemic diseases. Thus rickets came to be regarded at one time as a disease of the rich. The same effect is reported by Dr. H. S. Hutchinson to-day in India. The well fed children of the rich, brought up in confinement, develop rickets, while the poorly fed Indian children who lead an open-air life escape. Although rickets is a slum disease it does not develop in the slums of the tropics, where children live in the open and get plenty of sun. Errors of diet, such as prolonged lactation, pappy food, excess of carbohydrates, are powerless to produce rickets 'neath the tropical sun.

Dr. Lawson Dick deals fully with the pathology of the disease, and is especially interesting as to its effects on the permanent teeth and the physique in adult life.

Two points perhaps occur to the critic. Recent work by Hess and his collaborators in the United States and by the workers in Vienna, tend to show that the outstanding factor of a rickets-producing slum environment is want of sunlight, and that the role of cod liver oil, both preventive and curative, is more important than that assigned to it by Dr. Dick.

Dr. Dick has produced an extremely interesting book, and one which should be read by all who are interested in the building up of a sound national physique.

H. S.

Revised Weight Charts for Male and Female Babies.*

Issued by the Galton Laboratory for National Eugenics. To be obtained at the Cambridge University Press, Fetter Lane, E.C. 4. Price for two charts, separately mounted, 7s. 6d.

The Galton Laboratory has recently published two Infant Weight Charts, one for Male and one for Female babies. The purpose of these charts is to determine, as far as the single character weight permits, the relative standing of a given baby at any week of the first year of life. They are based on a very large number of observations as to weight of babies at given ages and the corresponding health of such babies at the end of the year.

By following the directions as to use, the chart enables a forecast of the health of any given baby to be made, and it is stated that any baby whose weight at a given age places it below the 75 per cent. health line certainly needs special treatment.

The charts should be found useful for plotting the weights at successive ages of any individual baby, and no doubt individual observers who use these charts will soon be able to form their own judgments as to their utility and be able to give a forecast of the health of the baby in accordance with their experience of them.

G. F. B.

Infant Mortality.

By Hugh T. Ashby, B.A., M.D., B.C., M.R.C.P. Second Edition. 8vo., 224 pp. Cambridge, 1922. The Cambridge University Press. Price 15s. 0d.

This book is one of the Cambridge Public Health series intended to influence the large body of educated and intelligent public opinion interested in the problems of public health. The author writes mainly from experience gained upon contact with the poor in Manchester and Salford and the views expressed are those held by many private practitioners. We doubt whether some of the generalisations on the causes and prevention of infant mortality would be accepted by medical officers of health with wide experience in administration.

The book suffers from errors which careful editing should have eliminated, and the style may not appeal to the educated public for whom the book is intended.

It is a pity that a volume of this series of books on public health subjects should exhibit grammatical atrocities enough to make a man of letters revolve in his grave with considerable velocity.

J.C.

Aids to Bacteriology.

By William Partridge, F.I.C. 16mo, 276 pp. London, 1922. Ballière, Tindall & Cox. Price 5s.

This is one of the well-known publications which are called collectively "The Students' Aid Series." Little need be said of a technical work which has reached its fourth edition; for that circumstance alone is sufficient testimony to the fact that it is appreciated and meets a real need. The small work offers a very useful summary of our present-day knowledge concerning disease-producing organisms, and a surprising amount of information is conveyed in its 264 small pages.

H. R. K.

Modern Methods in the Diagnosis and Treatment of Glycosuria and Diabetes.

By Hugh Maclean, M.D., D.Sc., M.R.C.P. 8vo., 159 pp. London, 1922. Constable & Co., Ltd. Price 12s.

The author aims at giving the busy general practitioner a short and concise account of our present knowledge of diabetes and glycosuria in so far as this knowledge bears on the clinical aspect of these conditions. The question of dieting and a method of treatment is set out and its possibilities discussed, with some notes on special diabetic preparations.

A Key to Health and Long Life (The Secret of Healthy Nutrition).

By F. W. D. Mitchell, I.S.O. Second Edition. 8vo., 192 pp. London, 1922. C.W. Daniel, Ltd. Price. 6s. 0d.

The author, who in the preface to the first edition, written in 1914, states that he was then in his seventieth year, almost a quarter of a century before completed the five-year course prescribed by the Joint Colleges of Physicians and Surgeons in London, but owing to the demands of other work could not devote sufficient time to pass the final examinations, and obtain a medical qualification.

The greater part of the book is devoted to the influence of digestion of food in the promotion of health, the connection of degenerative changes with indigestion, the diseases caused by dyspepsia, and the causation of rheumatism, gout, and allied diseases. The book is well stocked with quotations from the works of medical authorities on these and allied subjects, and advocates the leading of a simple and healthy life, and the abandonment of luxury, in its many forms, as the prime essential for a long and healthy life.

L. C. P.

The Community Health Problem.

By A. C. Burnham, M.D., Health Service, Atlantic Division, American Red Cross, etc. 8vo., 149 pp. New York, 1920. The Macmillan Company.

This short treatise upon the Community Health Problem is intended to assist workers and others interested in community welfare-work. To this end the writer gives useful information upon the health of the community, the present-day measures taken to promote this, and such other measures as have been suggested. Thus he contributes useful chapters on Social Hygiene generally, Industrial Hygiene, and Poverty, The Local Health Authority, Health Insurance, and the Private Medical Practitioner, in their relationship to Community Health.

The public health student, both medical and lay, does well to be cosmopolitan in his reading; and the fact that this book is written by an American colleague and deals with American circumstances and experiences will not detract from its interest and value. The author is evidently well informed upon his subject, and he is clear and judicious in his handling of it; he has compressed a large amount of information within a small compass.

H. R. K.

A Half Century of Public Health. Jubilee Historical Volume of the American Public Health Association.

Edited by Mazijck P. Ravenel, M.D. Large 8vo, 461 pp. New York, 1921. American Public Health Association.

This volume has been written by a large number of Specialist contributors, with a view to putting on record the progress made in the betterment of the health of the people of America, by each of their special departments, during a period of 50 years. It is dedicated to Dr. Stephen Smith, founder and first President of the American Public Health Association. The volume contains an excellent photogravure of this grand old man of American Public Health, who died last August in his 100th year. Dr. Smith contributed the first article on "The History of Public Health, from 1871 to 1921," and it must indeed have been a great joy to him to be able to write what he has written on the verge of "attaining my century." Modesty, apparently, forbade him to record what great work he did prior to 1866 in establishing a sanitary conscience in New York, for he took the most prominent part in getting the Health Law of 1866 passed, after much preliminary work.

It can be said of this book that it is the most fascinating of any that have appeared in recent years in regard to Public Health, for it summarises the various achievements which have been accomplished in every branch of Public Health work. It is a large volume, and is so well written that it lures one on to read more than one can assimilate at a single sitting. Because it is couched in popular language its value must be greater than had it been a scientific record, for, on the whole, it is of great educational value, and will stimulate those who do not believe that "Public Health is purchasable." Few, if any, books can be read by a student who means to devote the rest of his life to preventive medicine, with greater advantage than this one, for it gives the general history of preventive medicine in all its branches during the past 50 years or more, and it would give such a student a good ground work before he specialises. Although the volume was written for American consumption, it is nearly as applicable to England as to America.

Notable articles are those on "The History of Bacteriology," by F. P. Gorham, than which no better or more complete short history will be found in any text book on this subject; and "American Mortality Progress," by F. L. Hoffman, which, again, is an inspiring article containing much original observation.

Other articles are "The United States Quarantine System," by Dr. H. S. Cumming; "The History of State and Municipal Control of Disease," by Charles V. Chapin, M.D. This latter is a most valuable contribution on

the subject, because it takes such a wide grasp. The article on "Fifty Years of Water Purification" is one of excellent quality. It states that "The motive for water filtration is likely to change during the next generation from safety to cleanliness, from health to comfort. Both motives are understandable and right, and the watchword of the future will continue to be purity and wholesomeness."

Dr. North's article on "Milk and its Relation to the Public Health" gives an excellent summary of the steps taken to develop the milk industry to the premier position it now holds in the American States.

This book should be widely read by all interested in Public Health. It is published by the American Public Health Association, New York. Price, 22s. 6d. nett.

J. R.

London School of Tropical Medicine, Department of Helminthology.

Collected Papers, 1922. Nos. I.—XV. 8vo., 108 pp. 1922. London School of Tropical Medicine.

These papers are from the Department of Helminthology and are not likely to appeal to many. They deal with various aspects of this interesting branch of science, more especially the effects of heat upon Ankylostome Larvæ, the susceptibility of the egg masses of snails to drying, chemical fertilizers, &c., &c., and its bearing on the control of Bilharzia disease, also on the effect of tartar emetic on the eggs and miricidia of the Bilharzia hœmatobia. The results recorded in these fields of prophylaxis are interesting but not convincing as to practical value. The most interesting paper in this series is that by R. J. Ortlepp in which he describes the hatching and migration in a mammalian host of larvæ of Ascarids normally parasitic in cold-blooded vertebrates. The paper confirms the work of Stewart, Yorhida, Ransom and Crane, that this migration of ascarid larvæ was *via* the blood-stream, and that they penetrate the mucous lining of the intestine, reach the liver and hepatic veins, passing thence to the heart and from there to the lungs. In the lungs, the larvæ grow in size, pass into the bronchi, travel up the trachea, down the œsophagus, eventually reaching the intestine where, in a normal host, they attain sexual maturity. The other papers are of value to the technical reader working in the field of helminthology, but though not of general interest, they testify to the continued vitality and industry of workers in the London School of Tropical Medicine.

R. H. F.

Aids to Tropical Hygiene.

By R. J. Blackham, C.B., C.M.B., C.I.E., D.S.O., M.D., D.P.H. Second Edition. 8vo., 244 pp. London, 1922. Balliére, Tindall & Cox. Price 4s. 6d.

Colonel Blackham has succeeded in getting together a surprising amount of useful material between the boards of the second edition of his small "Aids to Tropical Hygiene." Speaking generally, with certain reservations, the book will serve the dual function for which, as he states in his preface, it is intended, namely: "(*a*) to provide the student for the D.T.M.H., and the Major, R.A.M.C., going up for his promotion test, with a ready means of

revising his reading before examination; and (*b*) to furnish the junior practitioner with a handy pocket-book containing a summary of the main facts with which the Health Officer in the tropics must be acquainted."

The work certainly covers well nigh every important subject connected with hygiene in the tropics, and is well arranged and clearly written. Hence it is all the more to be regretted that it contains not a few errors and omissions, some trifling, some of considerable importance.

Under water and water supplies the statement is made that even the external use of bad water for bathing purposes may cause Oriental sore, but there is no evidence whatever that this is the case. On the contrary everything points to the infection being insect-borne.

The general account of water supplies is concise and helpful, but as regards the section on purification the importance of chlorination would seem to justify a fuller consideration of the method with some reference to the use of chlorine gas.

Turning to the chapter on food and feeding, we find that Colonel Blackham disputes the generally accepted view that in warm climates the carbohydrates should be increased. He does not, however, give any reason for his somewhat heterodox belief that "the amount of food of all varieties should be much the same in all latitudes."

The chapter on clothing in the tropics is very much to the point, and the advice as regards wearing a cholera belt quite sound. Sites, soils and houses receive due attention, but it is scarcely fair to condemn cow-dung floors *in toto*. It is true they are insanitary while being made, but once completed little fault can be found with them in places, and they are many, where it is difficult to obtain other material.

It seems unwise to include excreta under the general term "refuse," but this is a small matter compared with the injunction that the "sun's rays must be brought to play upon the whole of the inside of the latrine for as many hours in the day as possible." Presumably this is based on the old and exploded idea that sunned fæces are safe fæces. Nothing could be further from the truth, and it is the sunny latrine which attracts flies and is, therefore, a source of danger.

Disinfection and disinfectants receive a good deal of attention, but surely at this time of day the statement should not be made that yellow fever is a disease in which complete disinfection of clothing and bedding is required (p. 213), while the inclusion of notes on pellagra under the heading of physical insecticides is inexplicable.

Enough has been said to show that while this book is a praiseworthy attempt to produce a *multum in parvo* as regards tropical hygiene, it bears evidence of haste in preparation and carelessness in proof-reading. It cannot be recommended as altogether a safe guide to the student, though to the reader who can, from his own knowledge, discount its faults, it affords a useful resumé of a huge subject.

A. B.

Elementary Sanitary Engineering in India.

By George Bransby Williams, M.Inst.C.E., M.I.Mech.E., F.R.San.I., F.R.G.S. Second Edition. 8vo., 124 pp., and 28 plates, illustrated. Calcutta and Simla, 1922. Thacker, Spink & Co. Price 9s. 0d.

This is one of the comparatively few books which accomplish what the Author claims. It is more than a text book for the use of candidates for Sanitary Inspectorships in Bengal; it is a comprehensive essay on the principles and practice of Indian Sanitary engineering, and it may fairly claim to have embraced subjects which are so modern that they have not yet reached the stage of being accepted by the Engineering profession.

The fundamental principles upon which the book is based are well set out in seven chapters, and in each case the Author has adhered closely to his text.

The chapter on surveying and levelling is clear and comprehensive, giving examples and illustrations which will be found useful by the student. The same remarks apply to the chapter on maps, plans and drawings and to that on drawing and mensuration.

The subjects of drainage, sewage disposal and water supply are dealt with in an educative way.

The Author realises that the essence of public health work is to be found in a good water supply. In no part of the book is there more knowledge of Indian methods and requirements shown than in the chapters relating to drainage, sewerage and sewage disposal. The execution of such work, or rather the neglect of it, is very closely related to the supply of efficient and unpolluted water in districts where it is impossible owing to expense to obtain a potable water from a source which is devoid of suspicion..

The Indian student should never fail to realise that 150 years ago the European towns and villages were as far back and as unacquainted with sanitary science as any of the Indian towns and villages of to-day, and that it is possible by availing themselves of European experience to obviate the expense of many trials and failures.

The methods of sewage purification by irrigation on land and by biological filters are accurately and clearly described, but the Author does not appear to have the same knowledge of bio-aëration, or activated sludge treatment. The reader, nevertheless, learns enough to induce him to enquire further.

There is an excellent subject index to the book, and the completeness of diagrams, illustrations and drawings to illustrate the text is one of its special features.

The book should be in the hands of everyone engaged in Indian public health work.

J. D. W.

Modern Building. Volume 3.

Edited by H. D. Searles-Wood, F.R.I.B.A., and Henry Adams, M.Inst.C.E. 4to., 155 pp., illustrated. London, 1921. The Gresham Publishing Co., Ltd. Price 15s. 0d. per Volume.

This Volume opens with Modern Sanitary Plumbing, followed by details of Sanitary Fittings. The coloured diagram in the former is quite good, and illustrates the three most modern types of water closet properly connected to soil pipe, whilst the plan of a Turkish Bath is both interesting and instructive, following details of slipper baths and fittings.

Various sketches of modern lavatories are shown, but cannot all be recommended as ideal, and it is especially unfortunate that one sketch of a sink shows a concealed horizontal overflow at its base, since inaccessible wastes or overflows are always undesirable, although few makers have yet entirely eliminated same.

The illustrations of water closets, including trough closets are good, but all trough closets are open to some objections. The section on urinals is very limited in its scope, however.

It is unfortunate more practical illustrations are not shown in this latter section, and whilst the one diagram illustrating the face grain of various useful timbers is good, the end grain and some of the means of differentiating one wood from another would have been useful to the Student. The information given, however, appears to be reliable and up-to-date.

Whilst the whole work is good, this volume does not appear to have advanced much above the average text-book.

E. W.

Waterworks for Urban and Rural Districts.

By Henry C. Adams, M.Inst.C.E., M.I.Mech.E., F.R.San.I. 8vo., 230 pp., illustrated. London, 1922. Sir Isaac Pitman & Sons, Ltd. Price 15s. 0d.

The Author claims for this book that it is "an orderly compilation of practical notes and data rather than a thesis upon the subject, and is intended primarily as a text book for students."

The subjects dealt with are those usually to be found in fairly comprehensive works on water supply, and include Sources and characteristics of supplies; Analyses; Consumption; Waste; Wells and Borings; Pumping machinery; Reservoirs; Purification; and Distribution.

The requirements of the Ministry of Health, in cases where that body's assent has to be obtained to the carrying out of any scheme, are set out in a separate chapter.

For the use of students the work is somewhat overburdened with complicated detailed descriptions and illustrations, mostly of mechanical devices, while engineers will notice the absence of any reference to others, many of which are in more general use than those described.

Otherwise the book contains a large amount of information, arranged in well ordered sequence, which can be recommended for the use of engineer students, rather than for students qualifying for positions as sanitary officers.

W. M.

The Prevention and Destruction of Rats.

By Elliot B. Dewberry. 8vo., 47 pp. London, 1920. John Bale, Sons, & Danielson, Ltd. Price 2s. 0d.

This pamphlet will prove of interest to many, in that it contains much information on the subject. The illustration of the black and brown rat included should enable anyone to distinguish between the two species; no mention, however, is made of the existence of a hybrid, a matter of some practical importance.

In the section on poisoning no mention is made directly of Mr. Claremont and his work, an omission all the more marked in view of the comprehensive mention of other authorities.

The brochure provides no evidence of the author's acquaintance with the work done in the City of London on rat repression.

The text contains many quotations, including those of the claims of the sellers of traps and poisons, which also appear in the advertisements; although less varied in their subject, these are almost as fascinating as those of any American magazine. The value of the monograph would have been much enhanced if the author had given his views on the respective merits of the various methods described.

The text is preceded by an instructive preface written by Sir A. E. Shipley.

C. W. H.

Filtration.

By T. Roland Wollaston, M.Inst.M.E. 16mo., 102 pp., illustrated. London, 1922. Sir Isaac Pitman & Sons, Ltd. Price 2s. 6d.

This little book only claims to be an elementary treatise on the subject of Filtration, and, to this extent, will prove of good use to the student of sanitary science and engineering in the department of water supply and sewage disposal.

The book, *inter alia*, deals with the following subjects, viz. :—

(1) Chemical precipitation, coagulation, and sedimentation;
(2) The physical action of filters;
(3) Chemical and bacterial action in filtration;
(4) The filtration of public water supplies, and
(5) The filtration of air.

In addition there are at least three chapters, out of eight, mainly devoted to the application of filtration to industrial purposes, and of only subsidiary interest to sanitarians. The sequence of the book, in its relation to water supply, would be better maintained if Chapter V. were placed immediately after Chapter III., without the imposition of Chapter IV. (Industrial Filtration), in order to avoid the possibility of the student being misled as to the applicability, or otherwise, for water works purposes, of some of the types of filters and devices which are described in Chapter IV.

W. M.

Birds and Blossoms.

A Calendar from Nature, by Colonel Sir Robert H. Firth, K.B.E., C.B. 4to, 32 pp., illustrated and 4 coloured plates. London, 1922. John Bale, Sons & Danielsson, Ltd. Price 2s. 6d.

Although this descriptive calendar of birds and blossoms does not directly refer to Hygiene, it will be useful in creating an interest in the careful observation of nature, which is a helpful training to the consideration of preventive measures.

It gives a sequential account of the birds and flowers to be seen through the year, and should both create and satisfy an interest in the natural world. The well known versatility of the author, who is a leading authority on many branches of Public Health, will add to the interest of the book.

MEETINGS HELD.

The Henry Saxon Snell Prize.

The subject given for Essays in competition for this Prize, was "Improvements in the Sanitary Appliances and Fittings for New Housing Schemes, having regard to Efficiency and Economy." Eight Essays were received and they have been brought under the consideration of the Council.

The adjudicators appointed for the Competition were :—

Louis C. Parkes, M.D., D.P.H.
A. Saxon Snell, F.R.I.B.A.
Sir Henry Tanner, C.B., I.S.O., F.R.I.B.A.
Professor E. R. Matthews, F.G.S., A.M.Inst.C.E., nominated by H.M. Office of Works.

Acting on the advice of the Adjudicators the Council do not see their way to award the Prize to any of the Competitors. They have decided, however, in view of the considerable amount of work and preparation involved in regard to the following five Essays, that the amount offered for the Prize shall be divided equally between the writers :—

"Finis Coronat Opus."
"Reliable."
"Dum Spiro Spero."
"Tubalcain."
"Efandec."

There are some useful suggestions in these Essays, but on the other hand there are some which they consider would prove unsatisfactory in practice.

Sessional Meetings.

Wallasey.—The meeting was held in the Town Hall on Friday, November 3rd, when a discussion on "The Expenditure of Public Money on Health : Why it is Worth While," was opened by F. T. H. Wood, O.B.E., M.D., D.P.H., Medical Officer of Health, Bootle, followed by A. A. Mussen, M.D., D.P.H., Assistant Medical Officer of Health, Liverpool ; B. T. J. Glover, M.B., Ch.B., D.P.H., Chief Tuberculosis Officer, Liverpool ; and W. H. Travers, M.Inst.C.E., Borough Engineer and Surveyor, Wallasey. The Chair was taken by Prof. H. R. Kenwood, C.M.G., M.B., F.R.S.E., Vice-Chairman of Council.

On Saturday, November 4th, visits were made to the Child Welfare Centre, the new Maternity Home, Street Improvements, Sand Defence Works, and Wallasey's Housing Scheme ; and the members were entertained to lunch at the Town Hall.

Examinations.

Since the last issue the following examinations have been reported :—

Manchester, October 27th and 28th.
Bristol, November 3rd and 4th.
Newcastle, November 10th and 11th.
Liverpool, November 17th and 18th.
Liverpool, December 1st and 2nd.
London, December 8th and 9th.
London, December 15th and 16th.

At these examinations 451 candidates presented themselves, and the following were awarded certificates :—

Sanitary Science as applied to Buildings and Public Works.

Coleman, Joseph, *Durham.*
Garlick, Harold, *Hyde.*
Selfe, Leonard Frank, *Croydon.*

Maternity and Child Welfare Workers.

Booth, Olive, *Reddish.*
Briggs, Elizabeth Ellen, *Huddersfield.*
Cooper, Olive Marjorie, *Clapham.*
Jenkins, Amelia Charlotte, *London.*
Nicholas, Kathleen May, *Sunderland.*

Women Health Visitors and School Nurses.

Airey, Flores Hilda, *Isleworth.*
Andrews, Jane, *Hereford.*
Baillie, Helen Elizabeth Jacqueline, *Camberwell.*
Ball, Margaret, *Hackney.*
Batty, Mabel Ida, *Gt. Missenden.*
Beel, Annie, *Hampton-on-Thames.*
Berry, Margaret, *Whitehaven.*
Berwick, Charlotte Rooke, *Kingston-on-Thames.*
Black, Janet Panton, *Glasgow.*
Bliss, Dorothy Florence Maria, *Charlton.*
Bodin, Ida Emilie, *Newcastle-on-Tyne.*
Booth, Stella Judith, *London.*
Burton, Amy Jane, *Abercarn.*
Campbell, Charlotte Jane Duncan, *Diss.*
Cathcart, Annie, *Newcastle.*
Child, Florence Evelyn, *London.*
Childs, Agnes Isabella, *East Ham.*
Clackson, Ethel, *Stamford Hill.*
Clarkson, Frances Mary Annette, *London.*
Clough, Frances, *Bradford.*
Cochrane, Elizabeth Douglas H., *Birmingham.*
Colburn, Elizabeth Fisher, *Glasgow.*
Coulman, Marian, *Chiswick.*
Coventry, Bessie, *Glossop.*
Cowell, Eva Victoria, *Tulse Hill.*
Crisp, Alice M., *Ealing.*
Deakin, Lucy Pownall, *Tulse Hill.*
Dearn, Edith Kate, *Banbury.*
Dewhurst, Elizabeth, *Seaham.*
Downs, Eliza, *Homerton.*
Dryer, Amy Elizabeth, *Dover.*
Dudfield, Norah Winifred, *Sydenham.*
Egerton, Edith, *Withington.*
Evans, Ellen Louisa, *Deddington.*
Evans, Ethel Louise, *Plaistow.*
Flower, Lily Sarah, *Upper Holloway.*
Forster, Edith, *Durham.*
Gilsenan, Gertrude, *West Hampstead.*
Granville, Mary, *Leeds.*

HAILSTONE, HENRIETTA MARGARET, *Manchester.*
HALLIDAY, JEAN PATON, *Motherwell.*
HARRISON, EVELYN, *East Dulwich.*
HARRISON, KATE ELSIE, *Sutton.*
HAYNES, MARY MELITA, *Chelsea.*
HEBBES, ETHEL MARY, *Ash Vale.*
HOPCRAFT, EDITH JOYCE, *Wolverhampton.*
HOPE, FANNY, *Norwich.*
HOWARTH, MABEL JESSIE, *Kew.*
HUFFER, MERCY ELIZABETH, *West Croydon.*
HUMPHREYS, MATILDA, *London.*
HUNT, MARY ELIZA, *Leeds.*
INGRAM, CLARA, *Southampton.*
IRVINE, ANNIE ELIZABETH, *Chertsey.*
JONES, DOROTHY ALICE, *Barking.*
KEENAN, ANNIE CATHERINE, *Barking.*
KING, EDITH, *Leicester.*
KINGSMILL, ANNIE, *London.*
LANSDOWN, ADELIA MARTHA, *Dorchester.*
LAUGHLIN, MAUD, *Consett.*
LAWRENCE, MARGARET FLORENCE, *Bristol.*
LEWIS, OLIVE, *Neath.*
MACADAM, NANCY AGNES, *Darlington.*
MAHONY, NORA, *Eltham.*
MAIN, AMY, *Clapham Common.*
MARTIN, CORDELIA GERTRUDE, *Gospel Oak.*
MASON, MAUDE, *Wellingborough.*
MATTHEWS, ELLEN MAUD, *Crumpsall.*
MAYE, MARION, *Leytonstone.*
MCCALLUM, ALEXINA, *Motherwell.*
MCGRATH, ANNIE MARIE, *E. Howdon.*
MESSENGER, CHRISTINE MARY MADELEINE, *Battersea Park.*
MITCHELL, MARGARET, *West Hartlepool.*
MURRAY, ETHEL CONSTANCE, *Pyrford.*
MURRAY, LAURA HARRIETT, *Grove Park.*
MYLES, MARGARET FRASER, *Aberdeen.*
NICKELS, ETHEL EMMA, *Sutton.*
NURSE, VIOLET ELAINE, *Edinburgh.*
ORWIN, FLORENCE LILIAN, *Palmer's Green.*
OTTIWELL, ANNIE, *Birmingham.*
PENNINGTON, FRANCES WINIFRED, *London.*
PERRY, EMILY, *Bristol.*
POPPLETON, MARY EVELYN, *Hammersmith.*
PORTER, DOROTHY EVA, *London.*
POTTINGER, JEAN, *South Shields.*
RAMSDALE, GRACE ELIZABETH, *Bowes Park.*
RAWNSLEY, EMILY, *Treharris.*
REDCLIFFE, ZITA MIRIAM, *Grimsby.*
RICE, MILDRED ADELINE, *Southsea.*
RICHARDSON, IVY FLORENCE, *Stockton-on-Tees.*
RICHARDSON, KATE IANTHE, *Clapham Common.*
RITCHIE, CATHERINE MAUDE, *Southampton.*
ROUSE, EMILY, *Banbury.*
RUDD, CLARA, *Whitehaven.*
RYAN, CIRSEY MADELINE, *Isleworth.*
SALMON, DOROTHY BLANCHE, *London.*
SALT, EDITH, *Aston-on-Clun.*
SANDERS, ELIZABETH BROWN, *Leicester.*
SANDILANDS, SHEILA CHRISTINE, *London.*
SAXON, EILEEN, *Altrincham.*
SCHOFIELD, HENRIETTA, *Kettering.*
SCULLY, ALICE MAY CHRISTIAN, *Bishop's Stortford.*
SEAGER, MARTHA DOWLING, *Ilford.*
SEDDON, MARY, *Rochdale.*
SHARPE, EMILY ANNA, *Liverpool.*
SHUTTLEWORTH, ANNIE, *Whitehaven.*
SIDEY, FLORENCE PHYLLIS, *London.*
SNELL, ANNIE LIZZIE, *Holcombe Brook.*
STANTON, AMY, *Wootton.*
TAYLOR, EDITH MARY, *Highbury.*
TAYLOR, JANE ELIZABETH, *Fulham.*
THORPE, MARJORIE ELLEN, *Farnham.*
TOMLINSON, ELINOR, *Uxbridge.*
TOPLEY, ETHEL ALLEN, *Luton.*

TREMBLE, JESSIE, *Forest Row.*
TURNER, AMY, *Leeds.*
WALES, MADGE, *Gainsborough.*
WHEELER, ETHEL FREDA, *Reading.*
WHYATT, CHARLOTTE LOUISE, *Blackheath.*
WILLIAMS, OLIVE MARY, *Wrexham.*
WILKINSON, FLORENCE BEATRICE, *York.*
WILLOUGHBY-LOFTS, HARRIETTE, *London.*
WILSON, LILY, *Ross-on-Wye.*
WOOD, ANNIE, *Malton.*
WOOD, CLARIE JEAN, *Bridgwater.*
WOOLLEY, MURIEL EVANGELINE, *Lyme Regis.*
YEMM, FLORENCE MARY, *London.*

School Hygiene, including Elementary Physiology.

AIRD, DOROTHY MADGE, *Liverpool.*
ALSTON, CHRISTIANNE, *Liverpool.*
BARR, FRANCES EVELYN, *Liverpool.*
BROWN, PHYLLIS ISOBEL LANE, *Liverpool.*
CALDWELL, HILDA, *Liverpool.*
DAWSON, DOROTHY ISABEL, *Liverpool.*
DEVLIN, JANE EMILY, *Liverpool.*
DIGGLE, EDITH, *Liverpool.*
DYMOCKE, EILEEN MAUDE, *Liverpool.*
EMPSON, GRACIELA, *Brixton.*
GOWANS, AUDREY, *Bromley.*
GRANT, FRANCES MACKENZIE, *Liverpool.*
KENDRICK, ELIZABETH LUCY, *Liverpool.*
PEARSON, ELFRIDA, *Liverpool.*
PRITCHARD, ELSIE, *Liverpool.*
PROCTOR, EDITH MARY, *Liverpool.*
PULLAR, KATHERINE RUTHERFORD, *Liverpool.*
QUINEY, DOROTHY KATHLEEN, *Kensington.*
SMYTH, LILY PARNALL, *Peckham.*
SWETTENHAM, PHYLLIS, *Liverpool.*
TRAFFORD, CELIA, *Kensington.*
WILSON, CATHERINE ETHEL, *Liverpool.*

Sanitary Inspectors.

ALLAN, ROBERT REGINALD, *Redcar.*
ARMSTRONG, JOHN CRESSWELL, *Gateshead.*
BARNARD, FRED STANDEN, *Tongwynlais.*
BILLINGHURST, OLIVE MARGARET, *London.*
BOWLER, WILLIAM JOHN, *Colchester.*
BROWN, JOSEPH, *Sunderland.*
BUNKER, ALFRED, *Laira.*
CARTLAND, WILLIAM ARTHUR, *Manchester.*
CHARITY, ARTHUR WILLIAM, *Pemberton.*
CUMMINGS, ARNOLD, *Crook.*
ECKERSLEY, JOHN, *Blackrod.*
EVANS, GEORGE RICHARD, *Earls Colne.*
FORRESTER, ROBERT, *Liverpool.*
GEORGE, MICHEL, *Maida Vale.*
GLEN, JEAN NAPIER, *London.*
HARRIS, TOM RICHARD, *Forest Gate.*
HATCH, ANNIE BLANCHE, *Ipswich.*
HATTON, FREDERICK WILLIAM, *Finsbury Park.*
HAYWARD, HORACE HOWELL, *Whitchurch.*
HAZELL, HENRY JOHN, *Epsom.*
JOHNSON, ALBERT, *Annfield Plain.*
JONES, THOMAS KYFFIN, *Llangefin.*
JUMP, ARTHUR, *Watford.*
KING, ALBERT EDWARD, *Dartford.*
LEATHER, WILLIAM ERIC, *St. Helens.*
LENNON, PATRICK HENRY, *Manchester.*
MARSH, KATE AUGUSTA, *Desford.*
MOFFAT, STANLEY HALL, *North Shields.*
MOORE, ARTHUR, *Manchester.*
MORLEY, JOHN JOSEPH, *Houghton-le-Spring.*
MOSS, FRANK TIPPLES, *Boro' Green.*

Paine, Harold Charles, *Biggleswade.*
Parkes, Albert, *Epsom.*
Pearce, William, *Wellingborough.*
Perry, Francis Bell, *Wallsend.*
Raby, Walter Thomas, *Manor Park.*
Ridgway, George Herbert, *St. Helens.*
Rigby, Catherine Gertrude, *Neath.*
Schofield, Arnold, *Manchester.*
Skinner, Frederick Thomas Edward, *Ealing.*
Taylor, Harold, *Huddersfield.*
Thomas, Howell Price, *Manchester.*
Twigg, Sarah, *Neath.*
Upham, Gladys Mary, *Brixham.*
Watson, John Smith, *Durham.*
Watts, Charles Herbert, *Yeovil.*
Whitelegg, John, *Manchester.*
Wilkinson, William, *Newcastle.*
Williams, Mary, *Keighley.*
Woolford, Harry James Thompson, *Epsom.*
Wright, Ernest James, *Heighington.*
Youll, Robert Arnold, *Whitley Bay.*

Tropical Hygiene.

Herd, George Victor, *Norwich.*
Moonsawmy, Harry Augustine, *London.*

Inspectors of Meat and other Foods.

Bishop, Alfred, *Port Talbot.*
Elliott, Kenneth, *Darlington.*
Elvy, Leslie Thomas, Lt. R.A.S.C. *Bulford Camp.*
Evans, James, *Port Talbot.*
Gardner, Alan Horace Cowell, Capt., R.A.S.C., *Shorncliffe.*
Gill, Gerald Whiteway, Lt. R.A.S.C. *Chatham.*
Gould, Henry Mark, *Bristol.*
Griffiths, Edgar Dennis, *Wrexham.*
Harding, Alfred John William, *Hull.*
Hauldren, Arthur Bell, *Crewe.*
Heads, Thomas, *Gateshead.*
Heeley, Henry John, *London.*
Howard, Harry, *Norwich.*
Jepp, John William, *Leeds.*
Linsley, William, *South Bank.*
Lippett, Gilbert, *Bristol.*
Moonsawmy, Harry Augustine, *London.*
Oversby, Vincent, *Bradford.*
Page, Charles William, *Watford.*
Parry, Trevor, *Wrexham.*
Pollock, Thomas Ernest, *Barrow-in-Furness.*
Rodgers, Charles, *Ashford.*
Smith, Harry Kempe, *S. Hackney.*
Taylor, Frank, *Bristol.*
Tingle, Charles, *Sheffield.*
Vigar, Albert Luther, *Brighton.*
Winchester, Edward William, *Islington.*
Wools, Edward Savile, Capt., R.A.S.C. *Salisbury.*

DOMINION AND FOREIGN NOTES.

The following representatives from foreign countries and the Overseas Dominions have recently visited the Institute :—

Dr. T. Asano, of the Industrial Hospital of the Asano Shipbuilding Company in Japan, who is interested in Industrial Hygiene and Welfare Work.

Dr. Frédéric Humbert, of the League of Red Cross Societies, from Paris, who was seeking information with regard to disinfecting appliances.

The Rev. Mark C. Hayford, D.D., F.R.G.S., from the Gold Coast.

Dr. Czeslaw Wroczynski, of the Ministry of Public Health of Warsaw, and Fellow of the Rockefeller Foundation International Health Board, from Poland. Dr. Wroczynski was in England investigating various aspects of practical public health work, and studying the organisation of the teaching and examination work of the Institute.

Dr. K. S. Wise, Surgeon-General, Trinidad, and Dr. G. H. Masson, Medical Officer of Health, Port of Spain, members of the Institute's Board of Examiners for the British West Indies, visited the Institute while the large London Examination was in progress.

Dr. R. W. Telford having left the State, has resigned from the Board of Examiners for Queensland.

Examinations have been reported as having been held in South Africa, Hobart (Tasmania), Adelaide (South Australia), and Regina (Saskatchewan), but the full reports of these have not yet come to hand.

FORTHCOMING MEETINGS.

Sessional Meetings.

Birmingham.—Friday, February 2nd, at 7.30 p.m., in the University, Edmund Street. Discussion on " Town and Country Milk Supplies : what is needed for their Improvement," to be opened by John Robertson, C.M.G., O.B.E., M.D., B.Sc., Medical Officer of Health, Birmingham.

The chair will be taken by Prof. H. R. Kenwood, C.M.G., M.B., F.R.S.E., Vice-Chairman of Council.—Hon. Local Secretary, Dr. John Robertson.

On Saturday, February 3rd, visits to milk plants, where methods of pasteurisation and sterilisation, bottling, etc., will be demonstrated.

Sheffield.—Friday, March 2nd, at 4.30 p.m., in the Town Hall. A discussion will be opened by the City Analyst, Mr. J. Evans. The members will be received and entertained to tea by the Lord Mayor at 4 p.m. The chair will be taken by Louis C. Parkes, M.D., D.P.H., Chairman of Council. Hon. Local Secretary, F. E. Wynne, M.B., D.P.H., M.O.H., Sheffield.

On Saturday, March 3rd, visits will be made to the Corporation Sewage Works, and the works of Messrs. Newton, Chambers & Co., at Thorncliffe.

Nottingham.—April 20th and 21st. Discussion on Local Authorities and the V.D. Problem. Hon. Local Secretary, Philip Boobbyer, M.B., M.S., M.O.H., Nottingham.

Guildford.—April 27th and 28th. Hon. Local Secretary, Joseph Cates, M.D., D.P.H., M.O.H., Surrey C.C.

Cambridge.—Saturday, June 23rd. Discussion on "The Grading of Milk," opened by J. E. Purvis, M.A., visits to dairy farm producing "certified" milk, and to the Field Laboratories. Hon. Local Secretary, A. J. Laird, M.D., D.P.H., M.O.H., Cambridge.

Ordinary General Meeting.

The Ordinary General Meeting will be held at the Institute on Wednesday, April 25th, at 4.30 p.m.

Students' Lectures.

The Introductory Lecture to the Spring Courses of Lectures will be delivered by Louis C. Parkes, M.D., D.P.H., on January 29th, at 5.30 p.m.

The Course for Sanitary Officers will commence on January 31st, for Health Visitors and Child Welfare Workers on February 2nd, and for Meat and Food Inspectors on February 9th.

The Royal Sanitary Institute established in 1908 an examination for Health Visitors and School Nurses and the Certificates granted have been very widely adopted by Local Authorities in making appointments.

In 1919 the Board of Education set out requirements with regard to the training and qualifications of Health Visitors, and arranged for the granting of certificates which the Ministry of Health stated would be necessary for appointments requiring Government sanction and grant, after a date to be prescribed.

From time to time modifications of these requirements have been introduced, and in July, 1922, the Ministry issued a memorandum naming the Board of Education certificate and also other alternative qualifications that would for the present be accepted for appointments.

The regulations for admission to this Examination of the Royal Sanitary Institute have been extended so as to include qualifications named in the memorandum of the Ministry, and from January, 1923, all candidates for the Institute's Certificate will be required to have :—

(*a*) Training in the duties of a nurse at a recognised Hospital Training School for a period of not less than three years ; with

(*b*) The Certificate of the Central Midwives Board or other equivalent qualification in Midwifery ; and also

(*c*) Attendance at a Course of Training approved by the Royal Sanitary Institute.

The Examinations of the Royal Sanitary Institute are well-known, and it is thought that this certificate which specially applies to the work and duties of a Health Visitor, being supplemental to the minimum requirements of the Ministry of Health, will be considered by Local Authorities in making appointments as providing evidence of additional training.

The Course of lectures is arranged as a preparation for the Health Visitors' Examination of the Royal Sanitary Institute and does not refer to the scheme prepared by the Board of Education.

The course is open to all students who wish to attend, but only those who hold the nursing and midwifery qualifications set out in the regulations, can be admitted to the Examination.

Examinations.

In Sanitary Science, and for various offices in the Public Health Service :—

Hereford, January 19th and 20th.
Preston, February 2nd and 3rd.
Hull, February 9th and 10th.
Plymouth, February 23rd and 24th.
Aberystwyth, March 9th and 10th.
Bournemouth, March 16th and 17th.
Regina, Saskatchewan, February.

Congress.

At the invitation of the Lord Mayor and City Council, it has been arranged to hold the 34th Congress and Exhibition of the Institute at Hull from July 24th to 29th, 1923. A Public Meeting to inaugurate the organisation of the local arrangements will be held in the Town Hall on Thursday, January 25th, at 3 p.m., to which Members and Associates are invited.

The invitation to appoint Delegates to the Congress has been issued to all Health Authorities in the United Kingdom, to Dominion, Colonial and Foreign Governments, and to the principal towns in the Dominions and Colonies of the Empire.

Members are asked to help in making the Congress known, and in securing the appointment of Delegates to the meeting.

Exhibition Awards.

The following additional Silver Medals have been awarded in connection with the Bournemouth Exhibition :—

The Electric Appliances Co., Ltd., 7 & 8, Fisher Street, Holborn, London, W.C. 1.
Eureka Vacuum Cleaner.

The Hoover Suction Sweeper Co., Ltd., Walmer House, 288-292, Regent Street, London, W. 1.
Electric Hoover Suction Sweeper.

Calendar for January to April.

As far as at present arranged.

JANUARY.

19 F. } Examinations—Hereford.
20 S. }

25 Th. Public Meeting, Guildhall, Hull, at 3 p.m. To inaugurate arrangements for Hull Congress.

29 M. Introductory Lecture to Students attending the Spring Courses, at 5.30 p.m., by Louis C. Parkes, M.D., D.P.H.

31 W. Lecture to Sanitary Officers, at 6 p.m. Public Health Acts—English, Scotch, Irish ; other Statutes relating to Public Health, by Charles Porter, M.D., B.SC., M.O.H., St. Marylebone.

FEBRUARY.

2 F. Lecture to Sanitary Officers, at 6 p.m. Public Health (London) Act, etc., by Charles Porter, M.D., B.SC.

2 F. Lecture to Health Visitors and Child Welfare Workers, at 6 p.m. Personal Hygiene, Importance of Cleanliness, by J. A. H. Brincker, B.A., M.D., D.P.H.

2 F. } **Sessional Meeting, Birmingham,** in the University, Edmund Street, at 7.30 p.m.
3 S. } Discussion on Town and Country Milk Supplies : what is needed for their improvement, to be opened by John Robertson, C.M.G., O.B.E., M.D., B.SC. M.O.H., Birmingham.

2 F. } Examinations—Preston.
3 S. }

5 M. Lecture to Sanitary Officers, at 6 p.m. Factory and Workshop Acts, Smoke Legislation, Food and Drugs Act, 1899, by Charles Porter, M.D., B.SC.

5 M. Lecture to Health Visitors and Child Welfare Workers, at 6 p.m. The Growth and Development of the Child, by J. A. H. Brincker, B.A., M.D., D.P.H.

6 Tu. Demonstration to Sanitary Officers, at the Public Health Offices, 10, Compton Terrace, Upper Street, Islington, N., at 6 p.m. Book-keeping as carried out in a Sanitary Inspector's Office, by G. Clark Trotter, M.D., D.P.H., M.O.H., Islington.

7 W. Lecture to Sanitary Officers, at 6 p.m. Duties of a Sanitary Inspector —A : General, Outdoor, by Charles Porter, M.D., B.SC.

7 W. Lecture to Health Visitors and Child Welfare Workers, at 6 p.m. Hygiene of the Special Senses, by Mrs. Margaret C. M. Hogarth, M.B., CH.B.

9 F. Lecture to Sanitary Officers, at 6 p.m. Duties of a Sanitary Inspector. —B : General, Indoor, by Charles Porter, M.D., B.SC.

9 F. Lecture to Health Visitors and Child Welfare Workers, at 6 p.m. Physical Development, by Mrs. Margaret C. M. Hogarth, M.B., CH.B.

9 F. Lecture to Meat Inspectors, at the Institute, at 6 p.m., by J. R. Hayhurst, M.R.C.S., D.V.S.M. (Vict.), Superintendent, Metropolitan Cattle Market.

9 F. } Examinations—Hull.
10 S. }

10 S. Inspection and Demonstration in the District of Chiswick, at 2.30 p.m. Conducted by J. H. Clarke, Chief Sanitary Inspector, Chiswick.

12 M. Demonstration to Sanitary Officers on Meteorological Instruments in the Parkes Museum, at 5.30 p.m., by the Director, E. White Wallis, F.S.S.

12 M. Lecture to Sanitary Officers, at 6 p.m. Duties of a Sanitary Inspector— C : Offensive Trades and Trade Nuisances, etc., by Charles Porter, M.D., B.SC.

12 M. Lecture to Health Visitors and Child Welfare Workers, at 6 p.m. Physical Conditions affecting Health in Schools, by Mrs. Margaret C. M. Hogarth, M.B.

14 W. Inspection and Demonstration at L.C.C. Municipal Lodging House, Kemble Street, Drury Lane, W.C., at 2.30 p.m.

14 W. Lecture to Sanitary Officers, at 6 p.m. Elementary Science : Physics, Chemistry, by Alan E. Munby, M.A., F.R.I.B.A.

14 W. Lecture to Health Visitors and Child Welfare Workers, at 6 p.m. Duties and Powers of Health Visitors, by T. Shadick Higgins, M.D., D.P.H., M.O.H., St. Pancras.

16 F. Lecture to Sanitary Officers, at 6 p.m. Elementary Science : Physics, Chemistry, by Alan E. Munby, M.A., F.R.I.B.A.

16 F. Lecture to Health Visitors and Child Welfare Workers, at 6 p.m. Hygiene of the Home, by Miss N. T. F. de Chaumont, ex-Sanitary Inspector, Kensington.

16 F. Lecture to Meat Inspectors at the Institute, at 6 p.m., by J. R. Hayhurst, M.R.C.V.S.

17 S. Demonstration—Meat Inspectors at Metropolitan Cattle Market, at 12.30 p.m. Conducted by J. R. Hayhurst, M.R.C.V.S.

17 S. Inspection and Demonstration at Schools and Public Buildings, Chiswick, at 2.30 p.m. Conducted by Edward Willis, M.INST.C.E., Engineer and Surveyor, Chiswick.

19 M. Demonstration to Sanitary Officers on Meteorological Instruments in the Parkes Museum, at 5.30 p.m., by the Director, E. White Wallis, F.S.S.

19 M. Lecture to Sanitary Officers, at 6 p.m. Elementary Science : Physics, Chemistry, by Alan E. Munby, M.A., F.R.I.B.A.

19 M. Lecture to Health Visitors and Child Welfare Workers, at 6 p.m. Sociological Conditions, by Miss N. T. F. de Chaumont.

20 Tu. Lecture to Sanitary Officers, at 6 p.m. Elementary Science : Physics, Chemistry, by Alan E. Munby, M.A., F.R.I.B.A.

21 W. Inspection and Demonstration in the District of Islington, at 2.30 p.m. Conducted by G. Clark Trotter, M.D., D.P.H.

21 W. Lecture to Sanitary Officers, at 6 p.m. Water : Composition, Pollution and Purification, by W. W. Jameson, M.D., D.P.H., M.O.H., Finchley.

21 W. Lecture to Health Visitors and Child Welfare Workers, at 6 p.m. Home Visiting and Advice, by Miss N. T. F. de Chaumont.

23 F. Lecture to Sanitary Officers and to Health Visitors and Child Welfare Workers, at 6 p.m. Elementary Statistics, by W. W. Jameson, M.D., D.P.H., M.O.H., Finchley.

23 F. Lecture to Meat Inspectors, at Institute, at 6 p.m., by J. R. Hayhurst, M.R.C.V.S.

23 F.
24 S. } Examinations, Plymouth.

24 S. Inspection and Demonstration at Express Dairy Co.'s Farm, Finchley, N., at 2.30 p.m.

26 M. Lecture to Sanitary Officers, at 6 p.m. Infectious Diseases, by James Fenton, M.D., D.P.H., M.O.H., Kensington.

26 M. Lecture to Health Visitors and Child Welfare Workers, at 6 p.m. Health Talks and Home Nursing, by Mrs. K. Lomax-Earp.

27 Tu. Lecture to Health Visitors and Child Welfare Workers, at 6 p.m. Home Economics and Cookery, by Mrs. K. Lomax-Earp.

28 W. Inspection and Demonstration in the District of Chiswick, at 2.30 p.m. Conducted by J. H. Clarke, Chief Sanitary Inspector, Chiswick.

28 W. Lecture to Sanitary Officers, at 6 p.m. Methods of Disinfection, by James Fenton, M.D., D.P.H.

MARCH.

2 F. Lecture to Sanitary Officers and to Health Visitors and Child Welfare Workers, at 6 p.m. Sanitary Appliances, by F. Osborne Smith, F.R.I.B.A.

2 F. } **Sessional Meeting, Sheffield,** in the Town Hall, at 4.30 p.m. Discussion to
3 S. } be opened by the City Analyst, Mr. J. Evans.

3 S. Demonstration—Meat Inspectors, Metropolitan Cattle Market, at 12.30 p.m.

3 S. Inspection and Demonstration at the Kensington Disinfecting Station, at 2.30 p.m. Conducted by James Fenton, M.D., D.P.H.

5 M. Lecture to Sanitary Officers and to Health Visitors and Child Welfare Workers, at 6 p.m. House Drainage, by F. Osborne Smith, F.R.I.B.A.

7 W. Inspection and Demonstration at Knight's Soap Works, Silvertown, E., at 2.30 p.m.

7 W. Lecture to Sanitary Officers, at 6 p.m. Details of Plumbers' Work, by Walter Scott.

7 W. Lecture to Health Visitors and Child Welfare Workers, at 6 p.m. Water Supply : Fittings and Ventilation in the Home, by J. H. Clarke, Chief Sanitary Inspector, Chiswick.

8 Th. Lecture to Sanitary Officers and to Health Visitors and Child Welfare Workers, at 6 p.m. Ventilation and Warming, by Edward Willis, M.INST.C.E., F.S.I., Engineer and Surveyor, Chiswick.

9 F. Lecture to Meat Inspectors at Institute, at 6 p.m., by J. R. Hayhurst, M.R.C.V.S.

9 F. }
10 S. } Examinations—Aberystwyth.

10 S. Demonstration—Meat Inspectors, Metropolitan Cattle Market, at 12.30 p.m.

12 M. Lecture to Sanitary Officers, at 6 p.m. Calculations, Measurements and Plans and Sections, by W. C. Tyndale, O.B.E., M.INST.C.E.

12 M. Lecture to Health Visitors and Child Welfare Workers, at 6 p.m. Organisation and Management of Infant Welfare Centres and Clinics, by K. M. Vaughan, L.S.A., D.P.H., Medical Officer, West Islington Infant Welfare Centre.

14 W. Inspection and Demonstration in the District of Islington, at 2.30. Conducted by G. Clark Trotter, M.D., D.P.H.

14 W. Lecture to Sanitary Officers, at 6 p.m. Building Materials, by F. Wilkinson, M.INST.C.E., Engineer and Surveyor, Willesden.

14 W. Lecture to Health Visitors and Child Welfare Workers, at 6 p.m. Official and Voluntary Agencies administering to Child Welfare : The Children Act, by K. M. Vaughan, L.S.A., D.P.H.

16 F. Lecture to Sanitary Officers, at 6 p.m. Building Sites, by F. Wilkinson, M.INST.C.E.

16 F. Lecture to Health Visitors and Child Welfare Workers, at 6 p.m. Prevention of Communicable Disease, by Joseph Cates, M.D., D.P.H., M.O.H., Surrey County Council.

16 F. }
17 S. } Examinations—Bournemouth.

17 S. Demonstration—Meat Inspectors, Metropolitan Cattle Market, at 12.30 p.m.

17 S. Inspection and Demonstration at the Wimbledon Sewage Disposal Works, at 2.30 p.m. Conducted by A. J. Martin, M.INST.C.E.

19 M. Lecture to Sanitary Officers, at 6 p.m. Sewerage, by A. J. Martin, M.INST.C.E.

19 M. Lecture to Health Visitors and Child Welfare Workers, at 6 p.m. Prevention of Communicable Disease, by Joseph Cates, M.D., D.P.H.

21 W. Lecture to Sanitary Officers, at 6 p.m. Sewage Disposal, by A. J. Martin, M.INST.C.E.

21 W. Lecture to Health Visitors and Child Welfare Workers, at 6 p.m. Tuberculosis, by Joseph Cates, M.D., D.P H.

23 F. Lecture to Sanitary Officers, at 6 p.m. Water Supply, Sources of Supply and Distribution, by William Matthews, M.INST.C.E.

23 F. Lecture to Health Visitors and Child Welfare Workers, at 6 p.m. Venereal Diseases, by J. Letitia Fairfield, C.B.E., M.D., D.P.H.

23 F. Lecture to Meat Inspectors, at Institute, at 6 p.m., by J. R. Hayhurst, M.R.C.V.S.,

23 F.
24 S. } Examinations—Edinburgh.

24 S. Demonstration—Meat Inspectors, Metropolitan Cattle Market, at 12.30 p.m.

24 S. Inspection and Demonstration at Water Works, at 2.30 p.m. Conducted by W. Matthews, M.INST.C.E.

24 S. Demonstration to Health Visitors and Child Welfare Workers, in the Parkes Museum, at 3 p.m. Conducted by J. H. Clarke.

26 M. Lecture to Sanitary Officers at 6 p.m. Scavenging, Disposal of House Refuse, by W. R. Hicks, A.M.INST.C.E., Borough Engineer and Surveyor, Ealing.

30 F. **Good Friday.**

APRIL.

2 M. **Easter Monday.**

4 W. Lecture to Sanitary Officers, at 6 p.m. The Laws, By-Laws, and Regulations affecting the Sale of Food, by J. Spencer Low, C.B.E., M.B., B.SC., D.P.H.

4 W. Lecture to Health Visitors and Child Welfare Workers, at 6 p.m. Ante-natal Hygiene (1), by Margaret G. Thackrah, B.A., M.D., M.R.C.P.

5 Th. Lecture to Health Visitors and Child Welfare Workers, at 6 p.m. Ante-Natal Hygiene (2), by Margaret G. Thackrah, B.A., M.D., M.R.C.P.

6 F. Lecture to Sanitary Officers, at 6 p.m. The Appearance and Character of Fresh Meat and other Foods, by J. Spencer Low, C.B.E., M.B., B.SC., D.P.H.

6 F. Lecture to Health Visitors and Child Welfare Workers, at 6 p.m. Care of Mother and Infant (1), by Margaret G. Thackrah, B.A., M.D., M.R.C.P.

7 S. Demonstration—Meat Inspectors, at the Metropolitan Cattle Market, 12.30 p.m.

7 S. Inspection and Demonstration at the Sewage and Destructor Works, Ealing, at 2.15 p.m. Conducted by W. R. Hicks, A.M.INST.C.E., Borough Engineer and Surveyor, Ealing.

7 S. Demonstration to Health Visitors and Child Welfare Workers, in the Parkes Museum, at 3 p.m. Conducted by J. H. Clarke.

9 M. Lecture to Sanitary Officers and Meat Inspectors, at 6 p.m. Signs of Health and Disease in Animals destined for Food, by J. R. Hayhurst, M.R.C.V.S.

9 M. Lecture to Health Visitors and Child Welfare Workers, at 6 p.m. Care of Mother and Infant (2), by Margaret G. Thackrah, B.A., M.D., M.R.C.P.

11 W. Demonstration—Meat Inspectors, at Smithfield Market, at 11 a.m.

11 W. Inspection and Demonstration at Maypole Margarine Works, Southall, at 2.30 p.m.

LIST OF MEMBERS AND ASSOCIATES

ELECTED NOVEMBER, 1922.

MEMBERS.

* Sanitary Science Certificate.
w Maternity and Child Welfare Workers' Certificate.
§ Sanitary Surveyors' (India) Certificate.
‡ Sanitary Inspector's Certificate
m Meat Inspector's Certificate.
v Women Health Visitors and School Nurses' Certificate.
s School Hygiene Certificate.

FELLOWS.

2393 1908. ARDERN, Edward, M.SC.VICT., D.SC., *Manchester*
F. 1922. Nov. *Corporation Sewage Works, Greengates, Davyhulme, Urmston, Lancs.*

1615 1921. COLSON, Charles Henry, O.B.E., M.INST.C.E.,
F. 1922. Nov. *Deputy Civil Engineer in Chief, The Admiralty, Whitehall, S.W. 1.*

3879 1915. ‡COOPER, William George, *"Lorraine," Boscombe Hill, Bournemouth.* (LIFE FELLOW.)
F. 1922. Nov.

1085 1897. FENTON, Alderman William Carter, F.R.I.B.A.,
F. 1922. Nov. J.P., *10, Paradise Square, Sheffield.* (LIFE FELLOW.)

4346 1919. MURRAY, John, F.R.I.B.A., F.S.I., F.S.ARC., *11,*
F. 1922. Nov. *Suffolk Street, Pall Mall, S.W. 1.*

4990 1922. SEELY, Major-General The Right Hon. John
F. 1922. Nov. Edward Bernard, C.B., C.M.G., P.C., D.S.O., *Brooke House, Isle of Wight.*

MEMBERS.

5006 1922. Nov. ABBOTT, Arthur Joe Bollen, P.A.S.I., *7, Preston Villas, Yeovil, Somerset.*

5007 1922. Nov. AHUJA, Harry S., B.SC.(EDIN.), *Sujansing Lane, Rohri, Sind, India* (*c/o Finlay, 7, Colinton Road, Edinburgh.*)

5008 1922. Nov. BHAVNANI, Pursa Jhamahnal, B.SC.(EDIN.), *c/o J. B. Advani & Co., Bunder Road, Karachi, India.*

5022 1922. Nov. *vw*BRIGGS, Miss Elizabeth Ellen, *4, Binn Villas Marsden, Huddersfield.*

5009 1922. Nov. CAWADIAS, Alexander, O.B.E., M.D.(PARIS), *Head Physician, Evangelismos Hospital, Joachim Street 25, Athens, Greece.*

5010 1922. Nov. ‡*m*CHAPMAN, Ebenezer John Jules, *Sanitary Inspector's Office, Buxted, Sussex.*

5011 1922. Nov. ‡FOSTER, George William, *Cleansing Superintendent, 22, Crow Hill Avenue, Cleethorpes, Lincs.*

5023 1922 Nov. *GARLICK, Harold, *Glyn Garth, Sheffield Road, Godley, Hyde, Ches.*

5012 1922. Nov. GOLDING, William, F.I.S.E., *188, Avenue Road, Mill Hill Park, W. 3.*

5013 1922. Nov. ‡GRAVES, Thomas, *Borough Surveyor, Municipal Offices, Kingston - upon - Thames.* (LIFE MEMBER.)

5014 1922. Nov. JAGTIANI, Tuljaram Metharam, B.SC.(EDIN.), *1743, Elphinstone Street, Camp, Karachi, India.*

5015 1922. Nov. KIRALFY, Gerald Archibald, M.B.E., *Architect, 10, Vicarage Gardens, Kensington, W. 8.*

5016 1922. Nov. LUMB, John, M.B., D.P.H. (*M.O.H.*), *Health Office, 11, Temple Row, Wrexham, N. Wales.*

5024 1922. Nov. §MATHUR, Prem Narain, *Sanitary Inspector, New Capital Railway Works, Raisina, Delhi, India.*

5017 1922. Nov. MOIR, John, M.A., M.B., CH.B. (*Deputy M.O.H.*), *2, Salisbury Street, Long Eaton, Derbys.*

5018 1922. Nov. NICHOLICH, George J., M.D.(VIENNA), *Assistant Minister of Public Health of Jugo-Slavia, Belgrade, Serbia.*

5019 1922. Nov. ‡PEARCE, Ralph Parnell, *Surveyor's Office, Melksham, Wilts.*

5025 1922. Nov. *PENWILL, Frank Ralph, *Engineer & Surveyor's Dept., Town Hall, Paignton, Devon.*

5020 1922. Nov. PIGGOTT, Frederick Stanley Lawrence, M.R.C.S., L.R.C.P. (*M.O.H.*), *" Oakfield," Teignmouth, Devon.*

5021 1922. Nov. SILK, William Walter Henry, *Sanitary Engineer 1, Esplanade Mansions, Calcutta, India.*

ASSOCIATES.

5920 1922. Nov. ‡ASHTON, George, *78, Arthur Street, North Sydney, N.S.W.*

5921 1922. Nov. *v*BERRY, Miss Margaret, *The Child Welfare Centre, Queen Street, Whitehaven, Cumberland.*

5922 1922. Nov. *v*CARTMELL, Miss Phyllis Mary, *15, Caldew Street, Silloth, Cumberland.*

5923 1922. Nov. ‡CROWTHER, Charles, *4, Lower Clay Pits, Halifax.*

5924 1922. Nov. ‡DEAN, Noel, P.A.S.I., *3, Hill Top Villas, Rock Hill, Bromsgrove, Worcestershire.*

5925 1922. Nov. ‡ECKERSLEY, John, *" Castlefield," Blackrod near Chorley, Lancs.*

5926 1922. Nov. ‡EVANS, Richard Oliver, *9, Hillside Terrace, Wattstown, Rhondda, Glam.*

8927 1922. Nov. ‡FEHLBERG, William John, *Chief Sanitary Inspector, South Brisbane, Queensland.*

8928 1922. Nov. ‡HARVEY, Malvern John, *19, West Heath, Bodmin, Cornwall.*

8929 1922. Nov. ‡HAYWARD, Horace Howell, *Sanitary Inspector and District Surveyor, Ightfield, Whitchurch, Shropshire.*

8930 1922. Nov. ‡HERRING, Robert William, *The Fernery, Esplanade, Burnham-on-Sea, Somerset.*

8919 1922. Nov. KUPPUSAMY, Pattamadai Vengu Aiyer, *Manager, Johore Medical Office, Johore Bahru, via Singapore, Straits Settlements.*

8931 1922. Nov. ‡LENNON, Patrick Henry, *242, Dickenson Road, Birch Fields, Manchester (S.).*

8932 1922. Nov. ‡MACLEOD, Miss Daisy Mary, *7, Francis Street, Luton.*

8933 1922. Nov. ‡*m*MALE, Arthur, *62, Tachbrook Street, S.W. 1.*

8934 1922. Nov. *s*MORTIMER, Miss Marion Eva, *Hockerill Training College, Bishop's Stortford, Essex.*

8938 1922. Nov. ‡RADCLIFFE, Albert, *53, Sportsbank Street, Catford, S.E. 6.*

8939 1922. Nov ‡ROWE, Arthur, *16, Abbey Terrace, Gateshead-on-Tyne.*

8935 1922. Nov. ‡STANGER, Herbert Cecil, *23, Hawthorne Terrace, Batley Road, Wakefield.*

8936 1922. Nov. ‡WATSON, Miss Hilda Jessie, *Nurses' Home, Midda Street, Stroud, Glos.*

8937 1922. Nov. ‡WILLIAMS, Miss Mary, *The West Riding of Yorks. Tuberculosis Dispensary, 143, Oaklands, Keighley, Yorks.*

ELECTED DECEMBER, 1922.

MEMBERS.

5026 1922. Dec. ‡BOWES, Noel Sawrey, A.M.INST.C.E., M.INST.M. & C.E., *Borough Surveyor, Municipal Buildings, Newbury.*

5027 1922. Dec. BROWN, Alexander Middleton, M.A., M.D., D.P.H., (*M.O.H. & S.M.O.*), *Town Hall, Hereford.*

5042 1922. Dec. CAMERON, Allan Gordon Russell, M.B., B.S., M.R.C.S., L.R.C.P., D.P.H., (*Dep. C.M.O.*), *The Shire Hall, Durham.*

5028 1922. Dec. DUNCAN, John Alfred Alexander, L.R.C.P., L.R.C.S., *Medical Officer of Health, c/o Deputy Director of Medical Services, Accra, Gold Coast, West Africa.*

5029 1922. Dec. HEWAT, Aubrey Middleton, M.D., D.P.H., (*M.O.H.*), *Town Hall, Fulham, S.W. 6.*

5030 1922. Dec. KEWALRAMANI, Nanikram Gurdassing, B.E. (BOMBAY), *Civil Engineer and Contractor, 136, Rosslyn Avenue, Rutherglen, Glasgow.*

5031 1922. Dec. LIVINGSTONE, Duncan, A.M.INST.M. & C.E., *Public Works Dept., Union of South Africa, Pretoria.*

5032 1922. Dec. ‡LOACH, Alfred Edwin, *Deputy City Surveyor, Town Hall, Wakefield.*

5033 1922. Dec. MACNAB, John Theodore, M.A., M.B., B.CH., M.R.C.S., L.R.C.P., D.P.H., (*M.O.H.*), *Brook House, Brook Street, Stafford.*

5034 1922. Dec. MOODY, Francis Tyrell, P.A.S.I., A.A.I., *Surveyor, 36, Wyke Gardens, Stockwell, S.W. 9.*

5035 1922. Dec. NEWSHOLME, Henry Pratt, M.A., M.D., B.SC., M.R.C.P., D.P.H., (*Co. M.O.H.*), *1, Princess Road, Ripon, Yorks.*

5041 1922. Dec. *vw*NICHOLAS, Miss Kathleen May, *4, Belle Vue Crescent, Sunderland.*

5036 1922. Dec. NISBET, Robert Kay, L.R.C.S., L.R.C.P., (*Acting M.O.H. & S.M.O.*), *Public Health Dept., Council Offices, Hindley, Lancs.*

5037 1922. Dec. OAKEY, John James Lane, *40, Brunswick Street, St. Paul's, Cheltenham.*

5038 1922. Dec. PARKINSON, Major George Singleton, R.A.M.C., M.R.C.S., L.R.C.P., D.P.H., *City Council Office, Gibraltar.*

5039 1922. Dec. ‡WHITE, Henry Raymond Hood, A.M.INST.M. & C.E., *42, Newcomen Street, Redcar, Yorks.*

5040 1922. Dec. ‡WORTLEY, Harold, "*Tolverne,*" *Malton Road, York.*

ASSOCIATES.

8943 1922. Dec. ‡ALLAN, Robert Reginald, *31, Alfred Street, Redcar, Yorks.*

8944 1922. Dec. ‡ARMSTRONG, John Cresswell, *23, Nile Terrace, Low Fell, Gateshead on Tyne.*

8945 1922. Dec. ‡BARD, Ernest Ernie, *Ferreira Deep Ltd., Johannesburg, Transvaal, South Africa.*

8946 1922. Dec. *v*BOWN, Miss Lucy, *East Lancashire Tuberculosis Colony, Barrowmore Hall, Great Barrow, Chester.*

8947 1922. Dec. ‡BROCKELBANK, Miss Lilla, *Room 88, 317, Collins Street, Melbourne, Victoria, Australia.*

8948 1922. Dec. ‡BUNKER, Alfred, *4, Alvington Terrace, Old Laira Road, Plymouth.*

8949 1922. Dec. ‡CARTLAND, William Arthur, *1, Walsingham Avenue, West Didsbury, Manchester.*

8950 1922. Dec. *v*CLOUGH, Miss Frances, *41, Park Lane, Little Horton, Bradford.*

8951 1922. Dec. *v*COLBURN, Miss Elizabeth Fisher, *26, Castle Terrace, Edinburgh.*

8940 1922. Dec. FELLOWES-FARROW, Edward Stanley, M.R.I.P.H. *28, Station Road, Cambridge.*

8952 1922. Dec. ‡FORRESTER, Robert, *38, Cranborne Road, Liverpool.*

8953 1922. Dec. *v*FORSTER, Mrs. Edith, *Fleming Field, Nr. Shotton Colliery, Sunderland.*

8941 1922. Dec. FOSTER, Charles William, *12, Sule Pagoda Road, Rangoon, Burma, India.*

8954 1922. Dec. ‡GIBBON, Herbert, *Littlethorpe Hall, Ripon, Yorks.*

8964 1922. Dec. ‡GREEN, John Thomas, *5, Shrewsbury Road, Edgmond, Newport, Salop.*

8942 1922. Dec. HILL, Stanley Oliver, A.M.T.P.I., *" York Villa," 44, Forest Road, Southport.*

8955 1922. Dec. ‡JONES, Thomas Kyffin, *4, Field Street, Llangefni, Anglesea.*

8956 1922. Dec. *v*LAMBERT, Miss Charlotte Alice, *Nurses' Residental Club, Auckland, New Zealand.*

8957 1922. Dec. ‡MERRILEES, Alexander, *County Sanitary Inspector's Office, Newton-Stewart, Wigtownshire.*

8965 1922. Dec. MOOR, Miss Mary Katherine, *9, Brettell Street, Walworth, S.E. 17.* (*Cert. S.I.E.B.*).

8958 1922. Dec. ‡MORLEY, John Joseph, *Le Spring House, Houghton-le-Spring, Durham.*

8959 1922. Dec. ‡PARRY, William Arthur, *Peyton Villa, Alan Road, Llandilo, Carmarthenshire.*

8960 1922. Dec. ‡SIMPKINS, Reginald Percy, *P.O. Box 6882, Johannesburg, South Africa.*

8961 1922. Dec. ‡TIPPET, Chester Charles, *Inspector, Health Office, Adelaide, South Australia.*

8962 1922. Dec. ‡WHITE, Arthur, *Building Contractor, Fraser Street, Geraldton, Western Australia.*

8963 1922. Dec. ‡WHITE, Harold E., *163, Oval Road, Croydon.*

OBITUARY.

The Council have to record with regret the death of some of those associated with the Institute :—

Fellow.—Arthur Henry Reid. An obituary notice is given in the Journal at page 208.

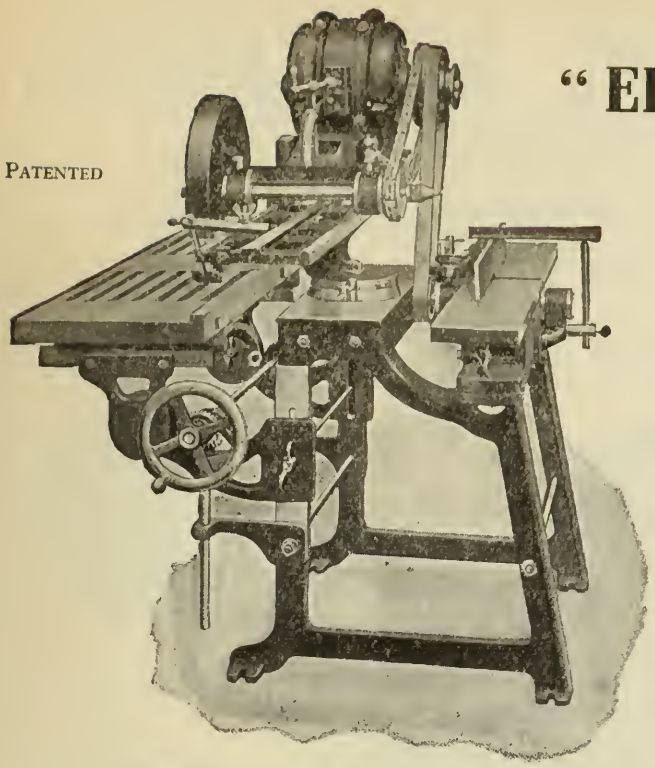
Member.—John Charles Radford, who had been a member of the Institute for more than 30 years. He was the Surveyor to the Putney Board of Works from 1875 until the formation of the Wandsworth Borough Council, and was well known in Putney for his interest in public affairs.

Associates.—Gibson Edwards, who was the Chief Sanitary Inspector for the County Borough of Tynemouth, and who died after a short illness on October 16th. He had been associated with the Institute for nearly 20 years.

Walter Midwinter, who had recently taken up an appointment as Sanitary Inspector at Hong Kong, and who died from malaria in September last.

The Council also regret to announce the death of Mr. William Haydon, which occurred at the beginning of November. Mr. Haydon was a member of the Board of Examiners of the Royal Sanitary Institute for conducting the Examinations for Meat and Food Inspectors, almost continuously since the examinations were commenced in 1899. His assistance was much valued by the Committee, as representing the practical side of the subject, and as securing the sympathy of the trade in the work of the Meat Inspector. Mr. Haydon was at one time Master of the Worshipful Company of Butchers, and he was for many years a member of the London County Council, and served on several of its Committees. He was also associated with the organisation of the Smithfield Cattle Shows. The Institute was represented at the funeral by a member of the Board of Examiners.

PATENTED



LATEST TYPE, FAMOUS

"ELLIOT" Woodworker.

The Machine that will Rip, Cross-cut, Bore, Trench, Surface, Mould, etc., driven by its own Motor.

Over 1,000 Machines sold in Great Britain since May, 1919.

Used by Corporations and Public Bodies all over the Country.

Guaranteed to save 25 to 30% Labour and Power Costs.

Send for list of users and particulars of Labour Saving Machines

Highest Award and Silver Medal for Efficiency at Bournemouth, 1922.

DOMINION LINES:

"ELLIOT" WOODWORKER, DOMINION SCROLL SAW AND SHAPER, DOMINION MORTISER, DOMINION BAND SAW, and DOMINION SPINDLE MOULDER.

DOMINION MACHINERY Co., Ltd., Woodworking Machinery Manufacturers,
Union Street South, HALIFAX. 'PHONE: 1551.

LONDON OFFICE: 11, QUEEN VICTORIA STREET, E.C. 4. 'PHONE: CITY 215.

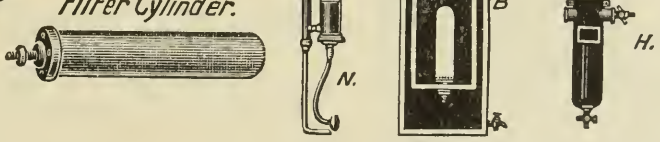
BRITISH OWNED

THE BRITISH

BERKEFELD FILTER

SARDINIAHOUSE, KINGSWAY, LONDON. W.C2

Filter Cylinder.



H.H.BROWNLOW.
R.S.BROWNLOW.

"QUALITY AND FLAVOUR"

BOURNVILLE COCOA

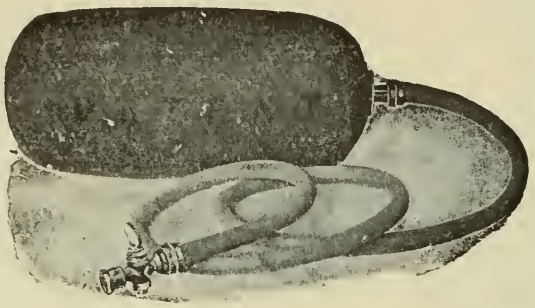
MADE UNDER IDEAL CONDITIONS.

SEE THE NAME "Cadbury" ON EVERY PIECE OF CHOCOLATE.

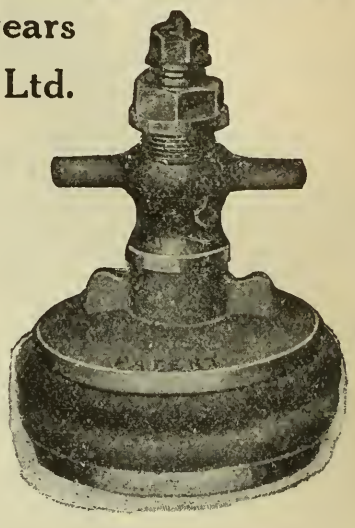
DRAIN TESTING APPLIANCES

of the well-known types supplied for many years by Messrs. JOHN JONES (CHELSEA), Ltd. are now being made and supplied by us.

Patent Flexible Bag Stopper.



Patent Screw Expanding Stopper.



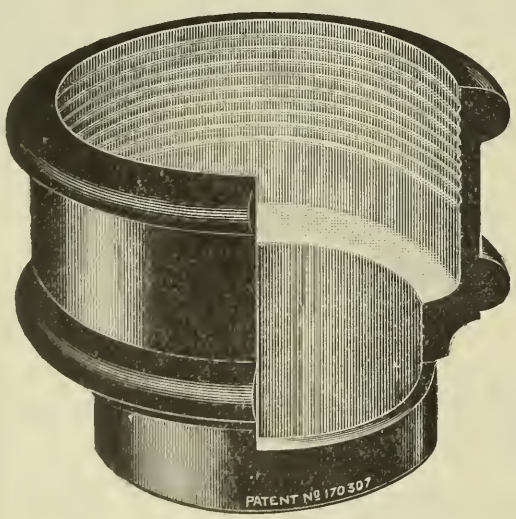
Also Sanitary Fittings to suit Buildings of every description.

Silver and Bronze Medals for Water Closets at Royal Sanitary Institute Congress and Exhibition, Folkestone, June, 1921.

GEORGE JENNINGS, Ltd., ('Phone HOP 3600.)

63 to 67, LAMBETH PALACE ROAD, LONDON, S.E. 1.

BURN'S PATENT GROOVED SOCKET SOIL and WASTE PIPES.



Observe corrugations shown in section.

Cast with grooves in the socket, which prevent the lead jointing being withdrawn by expansion and contraction due to variations of temperature or by hot water.

Invaluable for tropical climates.

Internal surface of pipes specially smooth.

Stocked in London County Council weights.

Prices same as for ordinary L.C.C. pipes.

Sole Manufacturers :—

BURN BROTHERS (London) LIMITED,

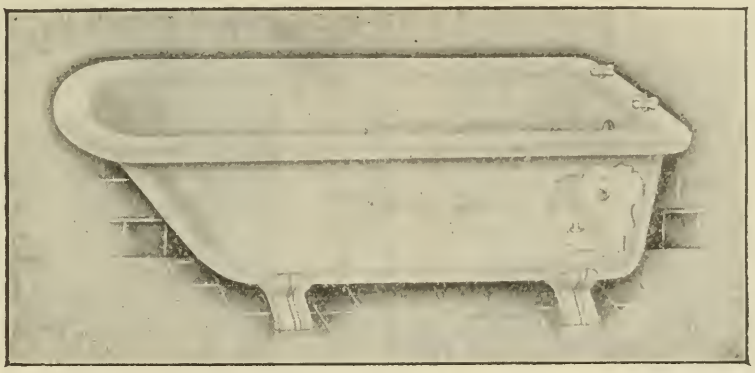
3, BLACKFRIARS ROAD,

Also at EDINBURGH. **LONDON, S.E. 1.**

The Farringdon Works and H. PONTIFEX & SONS, LTD.

Manufacturing Sanitary Engineers

SHOE LANE, LONDON, E.C. 4.



Pontifex's Patent "Easy Cleaning" Bath

AWARDED BRONZE MEDAL.

MANUFACTURERS OF

"ENAMELLED IRON VALVES"
for Baths and Lavatories.

BRONZE MEDALS AWARDED FOR

Our Patent "MASHER" FLOAT, which takes the place of the usual copper float, with soldered seams and a brass nipple in W.C. and storage cisterns.

BIDET WITH NON-SCALDING VALVE.

"HENLEY" PEDESTAL LAVATORY.

The Farringdon Works & H. PONTIFEX & SONS, Ld.

Manufacturing Sanitary Engineers,

SHOE LANE, LONDON, E.C. 4.

RODINE
RAPID RAT REMOVER
REGD. TRADE MARK

KILLS RATS & MICE

WAR OF EXTERMINATION.

Face your difficulties in Rat Extermination with a good supply of "Rodine" on hand. It gives satisfaction. It is fascinating and fatal. Experts in Rat Destruction always call for "Rodine" when difficulties have to be overcome. It ensures success. You should never be without it. It can be used anywhere with care. Explicit directions given with every tin. Tins—7½d, 1/3, 2/6, post 3d. 5/-, post 6d.

Quotations on quantities. Sole Maker,

T. HARLEY, Manf. Chemist, PERTH,

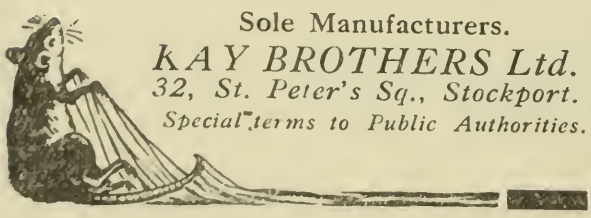
SCOTLAND.

The Sure *Safe* Way with RATS & MICE.

Certainty, simplicity and absolute safety make the DAK method the most effective and economical of all and the most satisfactory in the long run.

DAK Ratlime.

Medical and Sanitary Officers and others interested are invited to write for interesting descriptive leaflet giving reports of users.



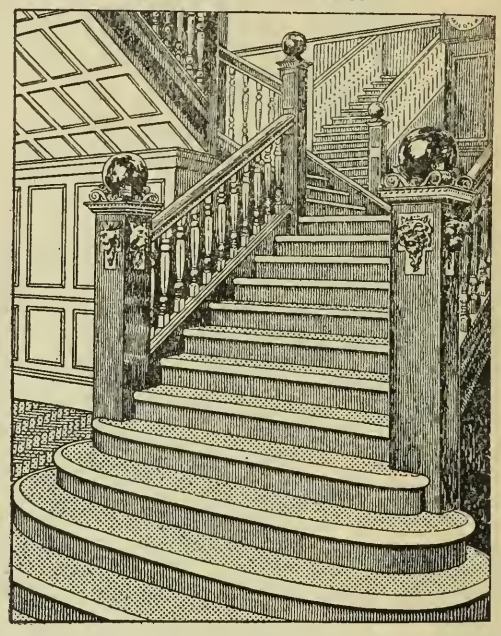
Sole Manufacturers.

KAY BROTHERS Ltd.

32, St. Peter's Sq., Stockport.

Special terms to Public Authorities.

STAIR TREADS made from COTTON which wear longer than CAST-IRON.



The Staircase illustrated above is fitted with Ferodo Patent Stair Treads, and so made safe even for careless users.

The Ferodo Treads fit on the nose of the step and take all the heavy wear. They have proved on test to wear longer than metal, and even when worn to paper thickness Ferodo Treads afford a sure foothold.

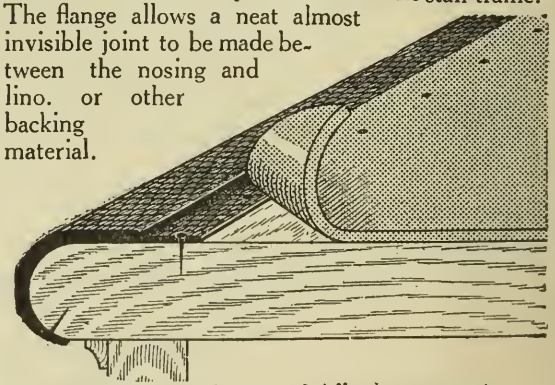
The several designs and colours in which they are made may be admirably adapted to suit all staircases of Wood, Iron, Stone, or Marble.

FERODO

Registered.

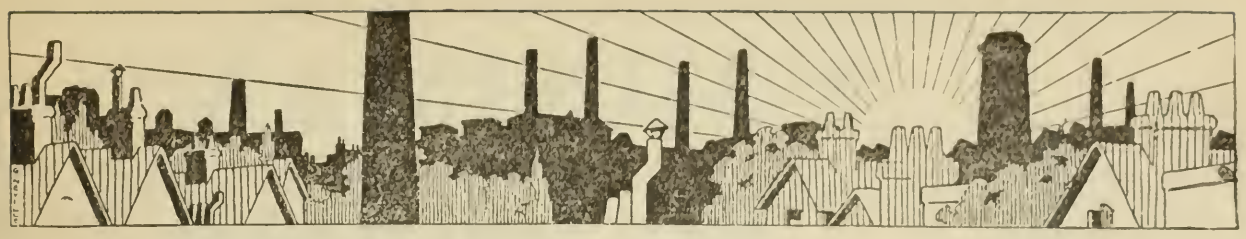
Patent STAIR TREADS

Type 1852 is the flanged type of nosing which fits on the nose of the step and takes all the stair traffic. The flange allows a neat almost invisible joint to be made between the nosing and lino. or other backing material.



Our Illustrated List "19A," shewing styles, colours, and prices, will be sent on request.

FERODO Ltd., Chapel-en-le-Frith, DERBYSHIRE. Ⓕb



Only six minutes sunshine in a week

During seven consecutive days in November last year the official records at Greenwich shewed a total of only six minutes sunshine.

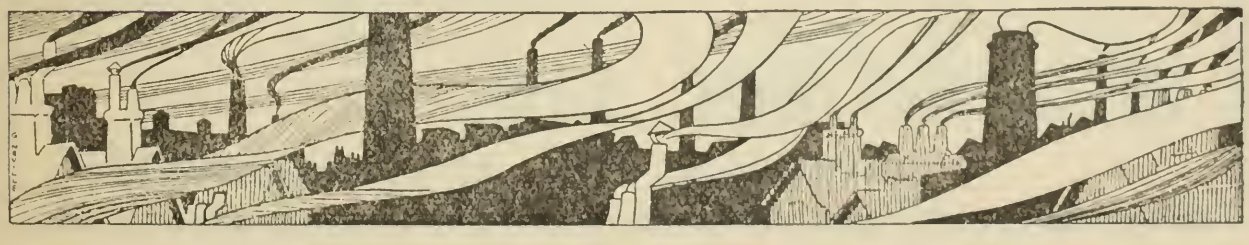
The terrible results of this loss of sunshine through fog and smoke are clearly reflected in the rise of the London death rate during the period to 13.3 per thousand.

A recent authoritative statement upon the terrible havoc wrought on public health by atmospheric pollution will be sent free of charge to any reader of this journal who applies to the Secretary of the undermentioned body.

THE BRITISH COMMERCIAL GAS ASSOCIATION

30, Grosvenor Gardens, S.W. 1.

N/16



"MINIMAX"

CHEMICAL HAND

Fire Extinguisher

OUR UNIQUE RECORD—

Over 56,300 Actual Fires Extinguished.
Over 1,000,000 Appliances sold since 1904.

OUR CLAIMS—

Durability, Simplicity, Efficiency.

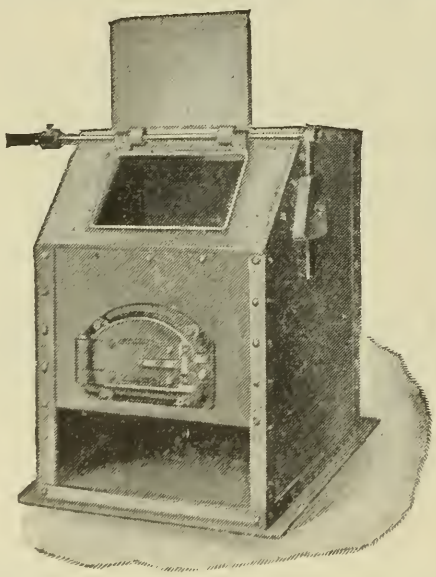
OUR PROOFS—

Thousands of unsolicited Testimonials.

Full particulars from:—MINIMAX Ltd. (Box 151)
Head Office & Works:—FELTHAM, MIDDLESEX.
Branches:—London, Glasgow, Dublin, Calcutta, Bombay, Sydney, Cape Town, Johannesburg.

("MINIMAX" REGD. TRADE MARK.)

REFUSE DESTRUCTORS



Standard Hospital Destructor.

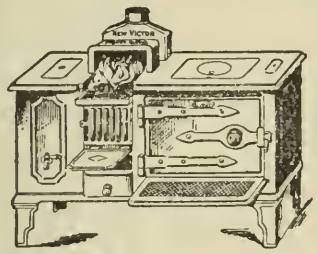
For Hospitals, Sanatoria and Public Institutions—Ask for List 141 D showing a range of sizes for capacities of 40lbs. upwards.

Our Portable "Sack" Type Disinfector at £57 complete has been adopted by many Home, Colonial, and Foreign Government Departments. Send for List 141 SK, giving full details, reports, etc.

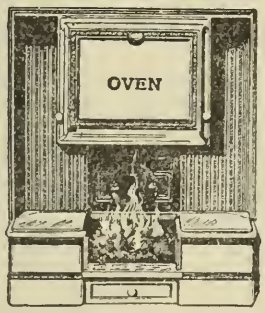
LONDON OFFICE:
108, Victoria Street, Westminster, S.W. 1.

MELDRUMS, Ltd.,
TIMPERLEY, MANCHESTER.

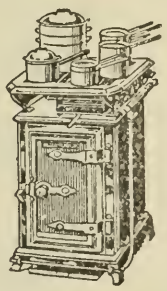
FLAVEL'S KITCHENERS.
THE ORIGINAL "LEAMINGTON" RANGE.
Made in all sizes from 3 to 6' and larger for hotel and institution work



FLAVEL'S PORTABLE STOVES.
First and best, made in six sizes from 30" to 42"



FLAVEL'S PARLOUR-OVEN GRATE.
The most perfect combination of cooking and living room grate extant. Will fit all ordinary openings. Made in two styles.



FLAVEL'S IMPERIAL GAS STOVES
to suit all requirements from the bungalow to the mansion.

FLAVEL'S "LEAMINGTON" STOVES have over a Century's Reputation and have been awarded Prize Medals over a period of 70 years.

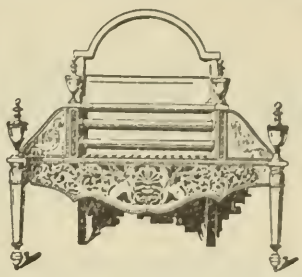
1851–1921

We shall be glad of your inquiries as our resources for production of superior quality cooking and heating apparatus at competitive prices increases year by year

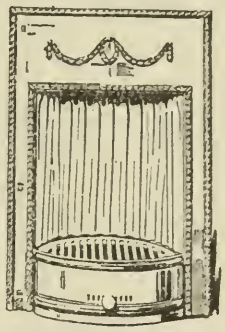
Particulars of where our goods may be seen in London and the Provinces will be furnished on application.

Telegrams "*Flavels Leamington.*"
Telephone 100 (*4 lines*).

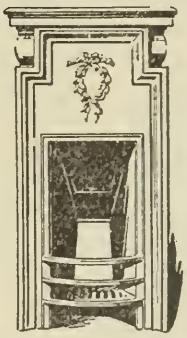
SIDNEY FLAVEL & Co Ltd
LEAMINGTON
ESTABLISHED IN THE REIGN OF KING GEORGE III.



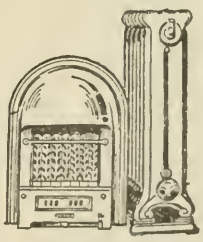
One example of many of FLAVEL'S "LEAMINGTON" period fireplaces.



One example of a large variety of FLAVEL'S "LEAMINGTON" INTERIOR FIRES.



One of a series of five FLAVEL'S "LEAMINGTON" BEDROOM MANTEL REGISTERS.



FLAVEL'S IMPERIAL GAS FIRES AND RADIATORS
for every purpose. Made in a variety of sizes and styles.

IZAL

DISINFECTANT

THE MODERN HIGH-POWER GERMICIDE

WILL NOT DECOMPOSE, AND RETAINS ITS GERMICIDAL ACTION WHEN MIXED WITH

HARD OR POLLUTED WATER, LIMEWASH, URINE AND OTHER ORGANIC FLUIDS.

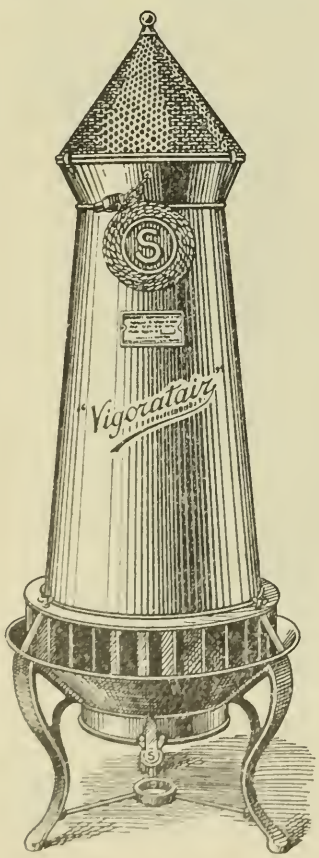
NEWTON, CHAMBERS & Co., Limited,

THORNCLIFFE.

NR. SHEFFIELD.

BY APPOINTMENT,

IZAL



STYLE "A"

"VIGORATAIR"

PATENT VENTILATING AND AIR PURIFYING MACHINES.

ELECTRIC DRIVEN.

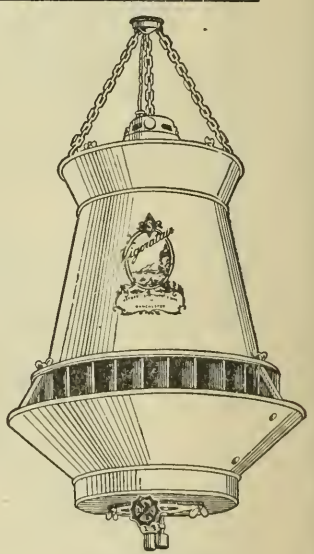
(Styles "A" & "B.")

• • •

WASHES THE AIR.
ABSORBS SUSPENDED DUST.
CONDENSES FLOATING STEAM.
DILUTES NOXIOUS FUMES.
CIRCULATES AND DISINFECTS THE ATMOSPHERE.
COOLS AND HUMIDIFIES.

Made in 8 Sizes dealing with 10,000 to 250,000 cub. ft. of Air per hour.

Power Consumption 1/45th to 1/3rd h.p.



STYLE "B"

ASK FOR DESCRIPTIVE LEAFLETS.

Patentees and Sole Makers—

HERBERT SMETHURST & SONS, Ltd.,
16, John Dalton Street, MANCHESTER.

H. K. LEWIS & Co. Ltd.

Telegrams: "PUBLICAVIT, EUSROAD, LONDON." Telephone: MUSEUM 1072.

MEDICAL PUBLISHERS AND BOOKSELLERS.

COMPLETE STOCK OF TEXT BOOKS AND RECENT LITERATURE
IN ALL BRANCHES OF HYGIENE AND SANITARY SCIENCE.

Large Stock of SECOND-HAND Books always available at 140, Gower Street.
Catalogue on application. Telephone: Museum 4031.
Orders by Post or Telephone promptly attended to.

Medical and Scientific Circulating Library

Close to Euston Square Station (Metropolitan Railway).
Hours 9 a.m. to 6 p.m.,
Sats. 9 a.m. to 1 p.m.

Warren Street Station.
All Tube Railways.

Annual Subscription, Town and Country, from ONE GUINEA.

ALL THE LATEST WORKS OBTAINABLE WITHOUT DELAY.

CATALOGUE of the **LIBRARY**, revised to December, 1917, **with Supplement, 1918-20,** containing Classified Index of Subjects and Authors, 564 pp., demy 8vo, **12/6** net. (To Subscribers **6/-**).

SUPPLEMENT, 64 pp., 1918-20. Separately, price **1/-** net.; postage **2d.**
Quarterly List of New Books and New Editions added to the Library, post free to any address regularly.

136, Gower Street & 24, Gower Place, London, W.C.1.

MASTER MINDS
USE

"CHLOROS"

THE
MASTER DISINFECTANT.
CARBOLIC CO-EFFICIENT (Rideal Walker Test) 20.

"CHLOROS" is specially suitable for

Sterilizing Water Supplies and Sewage Works Effluent,
Cleansing and Deodorising Drains, Urinals, Water Closets, and Markets,
Sterilizing Linen and Excreta in Hospitals
General Disinfection in Schools, Asylums, Hospitals, and Workhouses.

Makers—

The United Alkali Co., Ltd.,

CUNARD BUILDING, LIVERPOOL.

Telegrams: "UBIQUE, LIVERPOOL." Telephone: BANK 9280.

SANKEY'S (CANNING TOWN.) SANITARY WARE.

We hold large and complete stocks of pipes, gullies, interceptors, sinks, manhole covers, etc., of all shapes and sizes, and can give prompt delivery by our own lorries, or by truck to any station in the United Kingdom.

We have several improvements of our own, especially our deep intercepting gully which prevents drains blocking or becoming unsealed.

Our improved self-aligning glazed stoneware sink traps have many advantages over the old lead traps.

May we ask you to put our name on your buyer's list under "Pipes and Sanitary Fittings."

We shall be pleased to send you our fully illustrated catalogue on request.

We also stock Cement, Limes, Sirapite, Keene's and Plasters, Slates, Tiles, Firebricks, Fire Clays, etc., etc.

J. H. SANKEY & SON, LTD

Head Office: ESSEX WHARF, CANNING TOWN, E.16. *18 Wharves and Depots.*

Removes all disease carrying deposit without labour, trouble or danger.

"Delighted with results" epitomises the many testimonials received.

If your usual suppliers cannot supply, send their name and address for Free Sample.

Also packed in tins at **1/5** and **8/9**.

HARPIC Co.

(DEPT. 2 A O),

1, AVENUE ROAD, LONDON, S.E.5.

Royal Sanitary Institute

Patron—HIS MAJESTY THE KING.

COURSES OF LECTURES,

Including Practical Demonstrations and Inspections, are held by the Institute in London,

for Sanitary Officers	commencing	Jan. 31
,, Health Visitors and Child Welfare Workers	,,	Feb. 2
,, Meat Inspectors	,,	,, 9
,, Army Officers and Professional Men		March

EXAMINATIONS.

SANITARY SCIENCE.
SANITARY INSPECTORS.
MEAT INSPECTORS. SCHOOL HYGIENE.
SMOKE INSPECTORS.
HEALTH VISITORS AND SCHOOL NURSES.
MATERNITY AND CHILD WELFARE WORKERS.
TROPICAL HYGIENE.

CENTRES FOR 1923.

Aberdeen	Dublin	Manchester
Aberystwyth	Edinburgh	Newcastle
Belfast	Hereford	Nottingham
Birmingham	Hull	Plymouth
Bournemouth	Leeds	Preston
Bristol	Liverpool	Sheffield
Cardiff	London	

THE CERTIFICATES are officially recognised as qualifications for appointments by Government Departments and Municipal Authorities.

APPLICATION FORMS and full particulars can be obtained from the SECRETARY, 90, Buckingham Palace Road, London, S.W.1.

THE ROYAL SANITARY INSTITUTE.

90 BUCKINGHAM PALACE ROAD, S.W. 1.

Patron—HIS MAJESTY THE KING.

Telephone: VICTORIA 3739.

NOTICES.

Telegraph: SANITUTE, CHURTON, LONDON.

Fellows, Members and Associates are reminded that subscriptions to the Institute become due on January 1st.

If subscriptions are paid early in the year, it facilitates the work of the Institute and effects an economy in the administrative expenses.

ORDINARY GENERAL MEETING.

The Ordinary General Meeting will be held at the Institute on Wednesday, April 25th, at 4.30 p.m.

CONGRESS

At the invitation of the Lord Mayor and City Council, it has been arranged to hold the 34th Congress and Exhibition of the Institute at Hull from July 30th to August 4th, 1923. A Public Meeting to inaugurate the organisation of the local arrangements will be held in the Guildhall on Thursday, January 25th, at 3 p.m., to which Members and Associates are invited.

The invitation to appoint Delegates has been issued to all Health Authorities in the United Kingdom, to Dominion, Colonial and Foreign Governments, and to the principal towns in the Dominions and Colonies of the Empire.

Members are asked to help in making the Congress known, and in securing the appointment of Delegates to the meeting.

STUDENTS' LECTURES.

The Introductory Lecture to the Spring Courses of Lectures will be delivered by Louis C. Parkes, M.D., D.P.H., on January 29th, at 5.30 p.m.

The Course for Sanitary Officers will commence on January 31st; for Health Visitors and Child Welfare Workers on February 2nd; and for Meat and Food Inspectors on February 9th.

SESSIONAL MEETINGS.

Birmingham.—Friday, February 2nd, at 7.30 p.m., in the University, Edmund Street. Discussion on "Town and Country Milk Supplies: what is needed for their Improvement," to be opened by John Robertson, C.M.G., O.B.E., M.D., B.Sc., Medical Officer of Health, Birmingham.

The Chair will be taken by Prof. H. R. Kenwood, C.M.G., M.B., F.R.S.E., Vice-Chairman of Council. Hon. Local Secretary, Dr. John Robertson.

On Saturday, February 3rd, visits will be made to milk plants, where methods of pasteurisation and sterilisation, bottling, etc., will be demonstrated.

Sheffield.—Friday, March 2nd, at 4.30 p.m., in the Town Hall. A discussion will be opened by the City Analyst, Mr. J. Evans. The members will be received and entertained to tea by the Lord Mayor at 4 p.m.

The Chair will be taken by Louis C. Parkes, M.D., D.P.H., Chairman of the Council. Hon. Local Secretary, Prof. F. E. Wynne, M.B. D.P.H., Medical Officer of Health, Sheffield.

On Saturday, March 3rd, visits will be made to the Corporation Sewage Works, and the works of Messrs. Newton, Chambers & Co., at Thorncliffe.

Nottingham.—April 20th and 21st. Discussion on "Local Authorities and the Venereal Diseases Problem." Hon. Local Secretary, P. Boobbyer, M.D., D.P.H., Medical Officer of Health, Nottingham.

Guildford.—April 27th and 28th. Hon. Local Secretary, Joseph Cates, M.D., D.P.H., Medical Officer of Health, Surrey C.C.

Cambridge.—Saturday, June 23rd. Discussion on "The Grading of Milk," to be opened by J. E. Purvis, M.A., with visits in the afternoon to dairy farm producing "certified" milk and to the Field Laboratories. Hon. Local Secretary, A. J. Laird, M.D., D.P.H., Medical Officer of Health, Cambridge.

EXAMINATIONS

In Sanitary Science, and for various offices in the Public Health Service, will be held at :—

Hereford, January 19th and 20th.
Preston, February 2nd and 3rd.
Hull, February 9th and 10th.
Plymouth, February 23rd and 24th.
Aberystwyth, March 9th and 10th.
Bournemouth, March 16th and 17th.

Regina, Saskatchewan, February.

LIBRARY AND MUSEUM.

The Library is open from 9.30 a.m. to 5.30 p.m. daily, except on Saturdays, when it closes at 1 p.m. On Mondays it is open till 7 p.m.

The Museum is open as follows :—Mondays, 9.30 a.m. to 7 p.m. Other days, including Saturdays, 9.30 a.m. to 5.30 p.m. Members and Associates desiring to bring classes to the Museum for instruction, should make application beforehand.

The Members Common Room is available daily for reading and writing. Tea can be obtained in the afternoon.

JOURNAL.

The " Journal " will be published monthly commencing with the number issued on February 1st.

The January issue contains :—

Congress at Bournemouth.

Section C.—Maternity and Child Welfare, including School Hygiene.

" The Regulation and Distribution of Food at Maternity and Child Welfare Centres," by John Robertson, C.M.G., O.B.E., M.D., B.Sc.

" School Medical Services in certain Preventive and Curative Aspects," by David C. Kirkhope, M.D., Ch.M., D.P.H.

" The Effects of an Inefficient Midwifery Service on the Health of the Female Population," by Aleck W. Bourne, M.B., B.Ch., F.R.C.S.

" A Loophole in the Midwives Act," by R. J. Maule Horne, M.A., M.B.

Section D.—Personal and Domestic Hygiene.

Opening Remarks by the Lady Mayoress of London.

Address by Mrs. Muriel Lefroy.

" Education in Hygiene," by Dr. Alexander Cawadias.

" The Labour Saving House," by Mrs. C. S. Peel, O.B.E.

" The Elusive Ideal Home," by Arthur F. Wickenden, A.R.I.B.A.

Section E.—Industrial Hygiene.

" Constructive Welfare Work in Modern Industry," by Miss Constance Smith, O.B.E.

" Sickness in Industrial Communities," by E. A. Rusher, F.I.A., F.S.S.

" Tests of Aptness for Employment," by A. G. S. Mahomed, M.R.C.S.

Building Bye-Laws.—Condensed Milk Regulations.

NOTES.

Changes of address should be notified to the office without delay, so that the "Journal" and other communications may be sent regularly.

Particulars with regard to joining the Institute, and forms for the proposal of new Members and Associates, can be obtained from the Secretary.

(A detailed list of Lectures and Meetings is given in the Calendar in the Supplement, and copies of the syllabus can be obtained at the office.)

E. WHITE WALLIS,
Secretary.

January, 1923.

We are Sanitary Specialists

For many years we have specialised in the design and manufacture of sanitary goods of unquestionable quality. Being the actual manufacturers, we are able to institute such supervision as to ensure a maintenance of our high standards. Our illustrated catalogue gives full information of our many products, and is remarkable for the large number of special designs shewn.

BROADs

BROAD & CO., LTD.

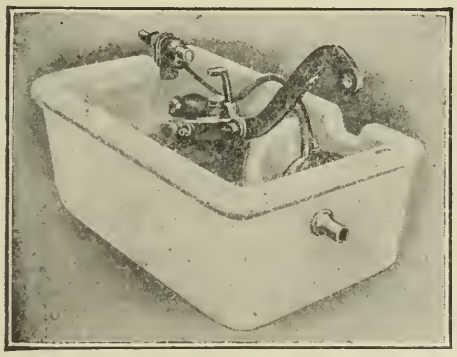
Sanitary Specialists,
Manufacturers of Portland Cement,
Bricks, Drain Pipes & Firegoods,
Ironfounders.

4, South Wharf, Paddington, W.2.

Telegrams: Broadanco, London. Telephone: Paddington 8 (3 lines)

18-11

Works and Depots also at West Drayton, Hanwell, Hayes, Cliffe, Church Gresley, Blackfriars and Finchley Road.



"SWAN" FIRECLAY CISTERN

commended by the Judges BOURNEMOUTH EXHIBITION 1922.

ALL NOISE IN CISTERN DISCHARGE EFFECTIVELY REMOVED by the

"SWAN" SILENCER

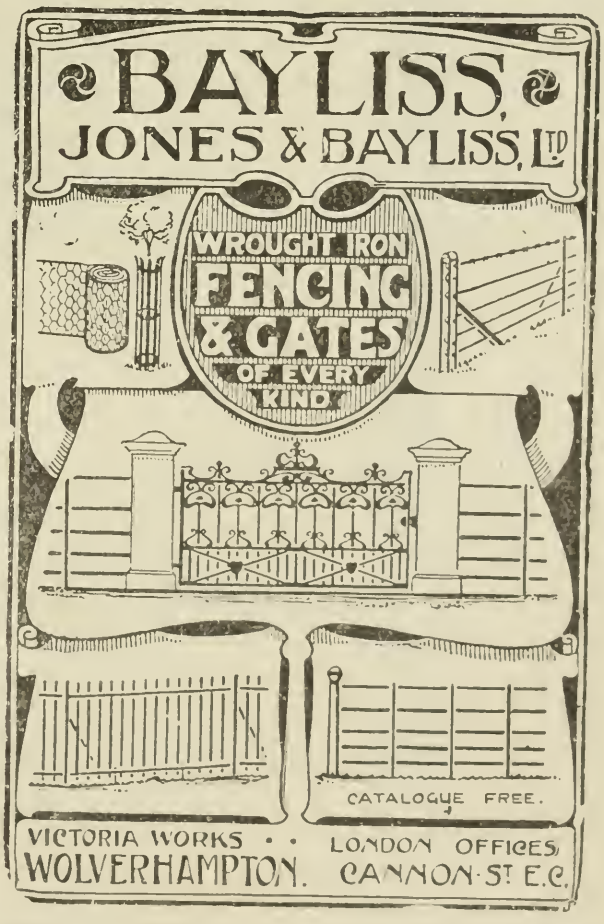
Can be fitted to any type of syphon cistern. Price 25/-.

Awarded Bronze Medal, R.S.I. Exhibition Bournemouth, 1922.

TO MANUFACTURERS :— The "Swan" Silencer can be fitted to any type of water waste preventer.

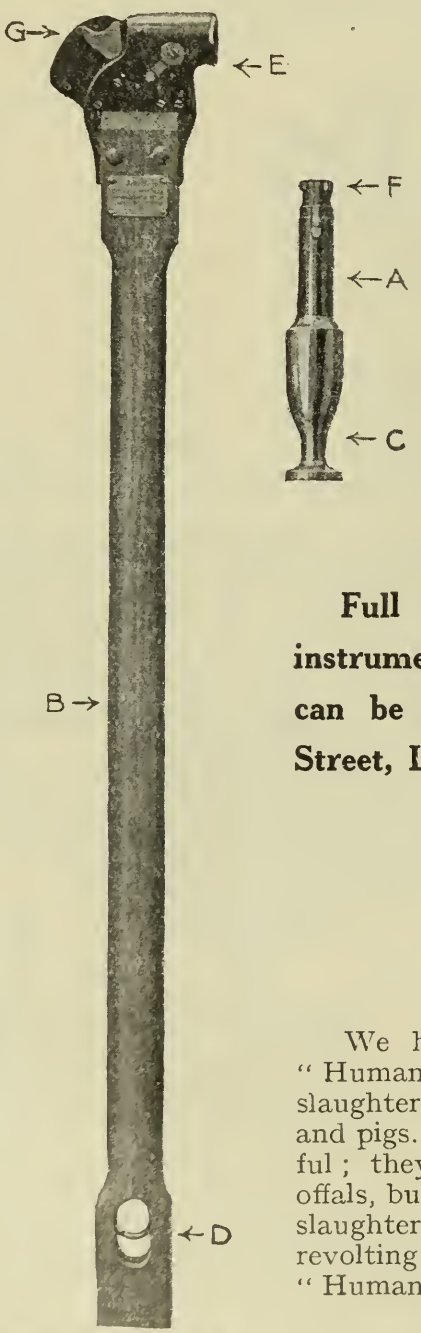
HOLTS PATENTS LTD.,

29 & 31, Westmoreland St., Liverpool.



THE R.S.P.C.A.

HUMANE KILLER



THE R.S.P.C.A.
HUMANE KILLER.

Reduction in Price.

The price of the above instrument has been reduced from £5 10s. to £4 (packing and carriage extra).

This reduction, which **entails heavy financial loss to the Society,** has been made solely with the object of furthering the cause of humane Slaughtering.

Full particulars of the Humane Killer and other instruments for humanely killing Cattle, Sheep and Pigs, can be obtained from the R.S.P.C.A., 105, Jermyn Street, London, S.W.1.

A TESTIMONIAL:

CHAPEL STREET,
STROUD, GLOS.,
May 19, 1921.

We have pleasure in testifying to the utility of the "Humane Killer" as used by us for over ten years in our slaughterhouse. We use "Humane Killers" for cattle, sheep and pigs. Death is instantaneous and accordingly less painful; they have no detrimental effect on either the meat or offals, but, in my opinion, meat so slaughtered is better than slaughtered in the old-fashioned method. I have seen revolting sights in felling beasts, which cannot happen if a "Humane Killer" is used.

F. SEYMOUR,
General Manager,
STROUD CO-OPERATIVE SOCIETY.

ACTIVATED SLUDGE PROCESS

The Diffused Air Method

is

THE MOST ECONOMICAL

and

THE MOST EFFICIENT

for the

Purification of Sewage and Trades Waste

Has been adopted by many towns in England, including London, Manchester, (three plants), Worcester, Tunstall, Hanley, Reading, Hertford; also by H. M. War Office, H. M. Office of Works, H. M. Board of Agriculture, Messrs Cadbury Brothers, Ltd., also by towns in India, South Africa, Australia, Canada, France, Denmark, Holland, and other countries.

We have received the Highest Award (Silver Medal) at the Health Exhibition of the Royal Sanitary Institute, held at Birmingham, July-August, 1920.

Write for Leaflet R.S.I.(1).

Address all enquiries to—

Activated Sludge Ltd

14, HOWICK PLACE, VICTORIA STREET, WESTMINSTER, LONDON, S.W.1.

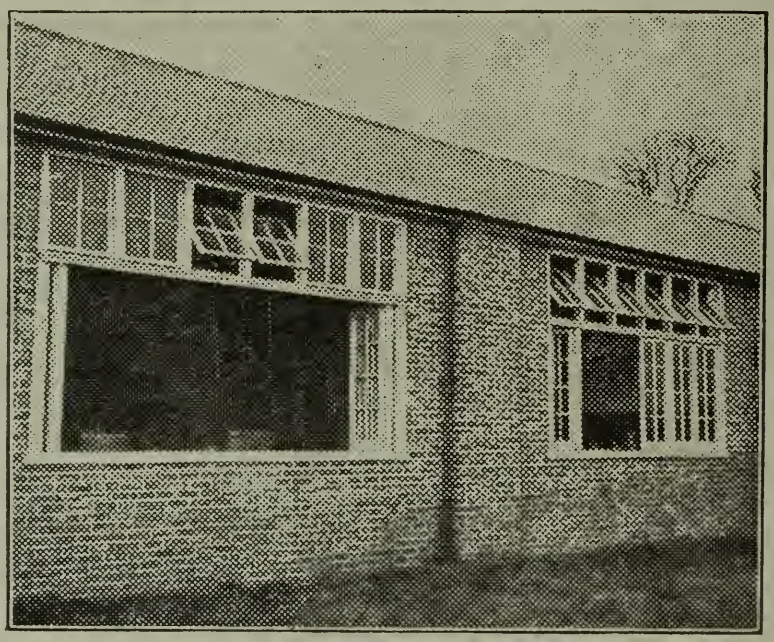
Telegrams:
"ACSLUDGETI, SOWEST, LONDON."

Telephone:
VICTORIA 5945

Unique and Essential

FOR

SANATORIA, OPEN-AIR SCHOOLS, HOSPITALS, ETC.



School facing Solway Firth fitted with "Esavian" Folding and Sliding Windows.

The Esavian Windows, Doors and Screens

Have been supplied to

BARROWMORE SANATORIUM, CHESHIRE
HAWKSMOOR SANATORIUM, DEVON
FRESH-AIR SCHOOL, DELAMERE, CHESHIRE
3RD DURHAM V.A. HOSPITAL, SUNDERLAND.
QUAKERS' YARD SECONDARY SCHOOL, MERTHYR TYDFIL, ETC.

The space occupied by the screen or casements can be thrown entirely open, thus the maximum amount of fresh air can be provided, and, when required, full protection against inclement weather.

For further particulars apply:—

E.S.A. THE EDUCATIONAL SUPPLY ASSOCIATION, Ltd.,
Stevenage House, 40/44, Holborn Viaduct, London, E.C.1.

WIGHTMAN & CO., LTD., "Old Westminster Press," Regency Street, S.W.1